Curriculum Vitae

November 2021

Personal Information

Name(s) / Last Name	**Jose Martinez-Carranza**
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Research Summary

My research interests focus on robotics, computer vision for robotics, Micro Air Vehicles (MAVs), and intelligent unmanned systems. I am the head of the intelligent Unmanned Aerial Systems (iUAS) group at INAOE. Under my leadership, the research in my group has contributed to the development of novel methods for autonomous Unmanned Aerial Vehicles (UAVs) or drones in GPS-denied environments. My group has explored different approaches to enable a UAV to perceive its environment, from visual perception to auditory perception. We have also explored aerial interaction for MAVs in GPS-denied spaces, aiming at enabling MAVs to manipulate the environment through a robotic arm attached to the vehicle. I have been a Research Fellow of the Royal Society in the UK through the highly prestigious Newton Advanced Fellowship. I currently hold an Honorary Senior Research Fellowship in the Computer Science Department at the University of Bristol. I am a member of the National System of Researchers in Mexico, Level 1. I also lead a Mexican team that has achieved outstanding performance in International Drone Competitions. My team is the first Mexican team to win an autonomous drone competition by winning 1st Place in the IEEE IROS 2017 Autonomous Drone Racing competition. My team won 2n Place in the IMAV 2016 and the Best Performance Award in the IMAV 2019. My team also ranked 3rd Place in the Game of Drones competition Tier 1 of NeurIPS 2019, organised by Microsoft and Stanford University and 1st Place in the Regional Prize of the OpenCV AI Competition sponsored by Microsoft Azure and Intel. In 2021, I am acting as the General Chair of the International Micro Air Vehicle Conference and Competition (IMAV) 2021, to be held in Puebla, Mexico, in November 2021, first time to be organised in Latinamerica ever.

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Education & Work Experience

Education
1. **PhD in Computer Science, 2012**
   University of Bristol. Faculty of Engineering. Bristol, UK.
   Thesis: *Efficient Monocular SLAM by Using a Structure-Driven Mapping*
2. **Master in Computer Science, 2007** **(Best Student)**
   Instituto Nacional de Astrofísica Óptica y Electrónica.
   Computer Science Department. Puebla, Mexico.
   Thesis: *Object Tracking by using a new foveal vision approach*
3. **BSc. in Computer Science. 2004.** **(Highest Honours: Cum Laude)**
   Benemérita Universidad Autónoma de Puebla. Puebla, México.
   Thesis: *System for the Visualisation of Digital Medical Images*

Languages
1. Spanish (Native Speaker)
2. English (Full Professional Proficiency/Lived in the UK for 7 years)
3. German (Beginner)

Work Experience
1. **Full-Time Principal Researcher B (Associated Professor)**
   Computer Science Department
   Instituto Nacional de Astrofísica Óptica y Electrónica (INAOE)
   August, 2020 - **[present]**
2. **Full-Time Principal Researcher A (Associate Professor)**
   Computer Science Department
   Instituto Nacional de Astrofísica Óptica y Electrónica (INAOE)
   August, 2017 - July, 2020
3. **Full-Time Associate Researcher C (Assistant Professor)**
   Computer Science Department
   Instituto Nacional de Astrofísica Óptica y Electrónica (INAOE)
   November, 2014 – July, 2017
4. **Postdoctoral Research Associate**
   Computer Science Department
   University of Bristol
   April, 2014 - October, 2014
5. **Postdoctoral Research Assistant**
   Computer Science Department
   University of Bristol
   August, 2012 - March, 2014
6. **Software Consultant** for the University West of England (UWE)
   University of Bristol
   May-July, 2012
7. **Research Assistant**

Computer Science Department
University of Bristol
Funded by SAMSUNG Electronics.
May, 2011 - April, 2012

8. **Teaching Assistant**
Computer Science Department
University of Bristol
Spring and Winter term 2008, Winter term 2011

9. **Lead Software Developer**
Computer Vision Laboratory
Instituto Nacional de Astrofísica Óptica y Electrónica (INAOE)
Participation in the following projects:
   1. Vision System to measure the behaviour of the Mexican fruit fly
   2. Optoelectronic Fire Director System - Garfio 2.0.
April, 2006 – July, 2007

Research Visits

1. **University of Bristol**. Faculty of Engineering, with *Dr. Andrew Calway*. October 6th – 15th, 2017. Bristol, United Kingdom.
2. **University College London**. Department of Computer Science, with *Dr. Simon Julier*. July 5th- 10th, 2016. London, United Kingdom.
3. **University of Chile**. Advanced Mining Technology Center, with *Dr. Javier Ruiz-del-Solar*. June 4th – 18th, 2016. Santiago, Chile.
4. **University of Bristol**. Faculty of Engineering, with *Dr. Walterio Mayol Cuevas*. November 9th – 20th, 2015. Bristol, United Kingdom.

Awards & Achievements

1. **General Chair of the International Micro Air Vehicle Conference and Competition (IMAV) 2021**. Puebla, México. November 2021.

2. **1st Place, Best Thesis Award "José Negrete Martínez'' Master Thesis Category**. Thesis: *"Geo-localisation of aerial images captured with drones"* Awarded to Aldrich A. Cabrera-Ponce, MSc student supervised by ***Dr. Jose Martinez-Carranza***. In the Mexican International Conference on Artificial Intelligence (MICAI) 2021. Mexico City, Mexico. October, 2021**.**

3. **1st Place Regional Prize Winner of the OpenCV AI Competition 2021. Region South America + Central America + Caribbeans. Monetary Prize: $5,000 USD.** Organised by OpenCV.org, Sponsored by Microsoft Azure and Intel. September, 2021.

4. **Honorary Senior Research Fellow** in the Computer Science Department, Faculty of Engineering of the **University of Bristol,** in the UK**.** July, 2021 – July, 2023.

5. **Phase 1 Winner in the OpenCV AI Competition 2021; Prize: 4 OAK-D Units.** Organised by OpenCV.org, Sponsored by Microsoft Azure and Intel. March, 2021.

6. **1st Place, Best Thesis Award "José Negrete Martínez'' Master Thesis Category**. Thesis: *"A CNN Pilot for Autonomous Drone Racing."* Awarded to Leticia Oyuki Rojas-Perez, MSc student supervised by ***Dr. Jose Martinez-Carranza***. In the Mexican International Conference on Artificial Intelligence (MICAI) 2020. Ciudad de México, México. October, 2020**.**

7. **Regular Member of the Mexican Computing Academy**. Mexico City, Mexico. October, 2020.

8. **42,258 mxn Studies Stipend granted by the Artificial Intelligence Consortium of the CONACYT Public Research Centers**. Granted to Aldrich Alfredo Cabrera Ponce, to conclude his Master Thesis during the period of September-December 2020, under the supervision of **Dr. Jose Martinez-Carranza.**

9. **1,000 CHF Financial Support granted by the Artificial Intelligence Consortium of the CONACYT Public Research Centers**, used to cover the article processing charge of the open-access article "DeepPilot: A CNN for Autonomous Drone Racing", published in the Journal Sensors, **Q1**. Funding is given under the project FORDECYT 296737. August, 2020.

10. **Full waiver of the APC (1,200 USD) for the Paper** "Detection of nearby UAVs using a multi-microphone array on board a UAV" **published in the International Journal of Micro Air Vehicles.** Special Issue on the IMAV19 event. May, 2020.

11. **3rd Place in the Game of Drones Competition, Tier 1.** Organised by Microsoft and Stanford University at the Thirty-third Annual Conference on Neural Information Processing Systems NeurIPS. Vancouver, Canada. December, 2019.

12. **Best Poster Award.** Paper: *"Depth Estimation using Óptical Flow and CNN for the NAO Robot"*. In the Mexican International Conference on Artificial Intelligence (MICAI) 2019. Veracruz, México. October, 2019.

13. **3rd Place, Best Thesis Award "José Negrete Martínez'' Master Thesis Category**. Thesis: *"Vision-based Autonomous Navigation for Wind Turbine Inspection using an Unmanned Aerial Vehicle."* Awarded to Rene Parlange, MSc student supervised by ***Dr. Jose Martinez-Carranza***. In the Mexican International Conference on Artificial Intelligence (MICAI) 2019. Veracruz, México. October, 2019**.**

14. **Special Award: Best Flight Performance in the International Micro Air Vehicle Conference and Competition (IMAV) 2019, Indoors Competition.** Madrid, Spain. October, 2019.

15. **Runner-Up for the Best Paper Award IMAV 2019.** Paper: *"Detection of nearby uavs using cnn and spectrograms".* Only 6 papers were selected. International Micro Air Vehicle Conference and Competition (IMAV) 2019. Madrid, Spain. October, 2019.

16. **Member of the National System of Researchers in Mexico, Level I**. Area VII – Engineering. Period 2020-2022. September, 2019.

17. **74,000 mxn Travel Support funded by the Artificial Intelligence Consortium of the CONACYT Public Research Centers**. Call: Financial Support to Attend Academic Events 2019. Funding is given under the project FORDECYT 296737. June 2019.

18. **2nd Vocal Member of the Board of Directors of the Mexican Robotics Federation.** Mexico City, Mexico. May, 2019.

19. **1st Place in the Autonomous Drone Category of the Mexican Tournament in Robotics 2019.** Guadalajara, Jalisco, Mexico. March, 2019.

20. **I was featured on the cover of the *Komputer Sapiens* Magazine and invited as Guest Editor.** Year X, Volume III. ISSN 2007-0691. A science dissemination magazine issued by the Mexican Society in Artificial Intelligence. Sept-Dec, 2018.

21. **3rd Place, Best Paper Award.** Paper: *"Combining Deep Learning and RGBD SLAM for Monocular Indoor Autonomous Flight".* Mexican International Conference in Artificial Intelligence (MICAI) 2018. Guadalajara, Jalisco. Mexico. October, 2018.

22. **Honorary Senior Research Fellow** in the Computer Science Department, Faculty of Engineering of the **University of Bristol,** in the UK**.** July, 2018 – July, 2021.

23. **5th Vocal Member of the Board of Directors of the Mexican Robotics Federation.** Mexico City, Mexico. April, 2018.

24. **1st Place in the Autonomous Drone Category of the Mexican Tournament in Robotics 2018.** Monterrey, Nuevo Leon, Mexico. March, 2018.

25. **1st Place in the IEEE IROS 2017 Autonomous Drone Racing competition** in Mos Eisley Vancouver Arena. IEEE International Conference on Intelligent Robotic Systems IROS 2017. Vancouver, Canada. September, 2017.

26. **1st Place in the Autonomous Drone Category - Advanced Level of the Mexican Tournament in Robotics 2017.** Mexico City, Mexico. March, 2017.

27. **Member of the National System of Researchers in Mexico, Level C.** Area VII – Engineering. Period 2017-2019. September, 2016.

28. **2nd Place in the International Micro Air Vehicle Conference and Competition (IMAV) 2016,** Indoors Competition. Beijing, China. October, 2016.

29. **2-Year Grant from Fondo Sectorial CONACYT-INEGI, Project 268528**. First project of its type for technological development and research on drones for the recording of video and aerial photography. Period: 2017-2019, **Funding: 1´570,197.12 mxn**. Mexico. June, 2016.

30. **Junior Member of the Mexican Computing Academy**. Mexico City, Mexico. November, 2016.

31. **3000 EUR Travel Support funded by Beijing ZHZ Technologies**, a world-leading company specializing in heavy-lift coaxial unmanned helicopters, to participate in the International Micro Air Vehicle Conference and Competition IMAV 2016 in Beijing, China. May, 2016.

32. **1st Place in the Service Robots Category @home of the Mexican Tournament in Robotics.** Cd. Victoria, Tamaulipas. Mexico. March, 2016.

33. **Numerary Member of the Mexican Robotics Federation.** Ciudad Victoria, Mexico. March, 2016.

34. **1st Place in the Service Robots Category @home of the Mexican Tournament in Robotics.** Mexico City, Mexico. April, 2015.

35. **Royal Society-Newton Advanced Fellowship**. Project RAFAGA. Project to carry out research on autonomous drones in GPS-denied environments. 2 Year Grant with 1 Year Extension, period 2015-2018. Funded by the Newton Fund with **£74,000**. United Kingdom. March, 2015.

36. **£1000 Software Royalties.** Licensed to SAMSUNG Electronics Ltd. Software developed in the project Real-Time Visual Mapping for the Humanoid Robot RoboRay. Bristol, UK. May, 2013.

37. **Recognition Letter from the National Council of Science and Technology of Mexico.** For having successfully concluded the PhD Studies. Scholarship number 301992. Register 189903. July, 2012.

38. **£16,000 Studies Stipend. University of Bristol.** Funded by SAMSUNG Electronics Ltd. Project COS.RY9257.6525. May, 2011 – June, 2012.

39. **£750 Travel Support funded by the British Machine Vision Association (BMVA)** to attend the International Conference on Robotics and Automation (ICRA), May, 2012.

40. **Funding to attend the EPSRC-BMVA Summer School in Computer Vision.** Roberts Fund for Training Skills. Computer Science Department. University of Bristol. University of Essex, UK. July, 2008.

41. **PhD Scholarship. Funded by the National Council of Science and Technology of Mexico.** Granted on the basis of Academic Merit. September, 2007.

42. **1st Place in the Aquatic Category of the 3rd Mexican Tournament in Cleaning Robots.** Xalapa, Veracruz, Mexico. July, 2006.

43. **Best Student of the Generation. Master in Research Computer Science Program.** Computer Science Department. Instituto Nacional de Astrofísica Óptica y Electrónica. Puebla, México. November, 2005.

44. **Master in Research Scholarship. Funded by the National Council of Science and Technology of Mexico.** Granted on the basis of Academic Merit. September, 2004.

45. **Highest Honours – Cum Laude in Bachelor Studies**. Benemérita Universidad Autónoma de Puebla, Puebla, México. July, 2004.

46. **Outstanding Academic Performance Scholarship.** Funded by the Sistema Integral de Becas of the Benemérita Universidad Autónoma de Puebla for the period 2000 – 2003. Granted on the basis of Academic Merit.

47. **Honour Mention in the 2003 ACM Central America Programming Contest**. Universidad de las Américas de Puebla. Puebla, México. November, 2003.

48. **Participation in the 9th International Youth Scientific Exhibition/Expo-Science International (ESI) 2003**. Moscow, Russia. July, 2003.

49. **2nd Place in the National Scientific Fair 9th Great Meeting of Young Science**. Puebla, Mexico. November, 20*02.*

50. **Outstanding Academic Performance Certificate.** Faculty of Computer Science, Benemérita Universidad Autónoma de Puebla. Puebla, México. July, 2001.

51. **Honour Mention as Best Delegation Team in the V Mexican Olympiad in Informatics** (Team Leader). Coahuila, Mexico. June, 2000.

52. **2nd Place in the IV Mexican Olympiad in Informatics**. Mexico City, Mexico. May, 1999.

Publications

Citations
- **Total in Scopus (excluding self-citations from all authors): 261**
- **H-index: 7** Source: https://www.scopus.com/authid/detail.uri?authorId=35113501600
- **ORCID ID:** http://orcid.org/0000-0002-8914-1904

Notes:
- Current and former students under my supervision who collaborated in a publication are marked in **red**.
- Quartiles are assigned according to the Journal Citation Report (JCR) 2020.

Peer-Reviewed Journal Papers Indexed in the Journal Citation Report

1. L. O. Rojas-Perez, **J. Martinez-Carranza**. "Towards Autonomous Drone Racing without GPU using the OAK-D Smart". MDPI Sensors. November, 2021. **JCR Q1.**
https://doi.org/10.3390/s21227436

2. C. Osorio, D. Durini, J. J. Rangel-Magdaleno, **J. Martinez-Carranza**. "Single-Pixel Imaging: An overview of different methods to be used for 3D space reconstruction in harsh environments". Review of Scientific Instruments. November, 2021. **JCR Q3.**
https://doi.org/10.1063/5.0050358

3. R. Parlange, **J. Martinez-Carranza**. "Leveraging single-shot detection and random sample consensus for wind turbine blade inspection". Intelligent Service Robotics. September, 2021. **JCR Q3.**
https://doi.org/10.1007/s11370-021-00383-6

4. R. Lopez-Campos, **J. Martinez-Carranza**. "ESPADA: Extended Synthetic and Photogrammetric Aerial-image Dataset". IEEE Robotics and Automation Letters. October 2021. **JCR Q1.**
https://doi.org/10.1109/LRA.2021.3101879

5. J. A. Cocoma-Ortega, **J. Martinez-Carranza**. "A compact CNN approach for drone localisation in autonomous drone racing". Journal of Real-Time Image Processing. August, 2021. **JCR Q3.**
https://doi.org/10.1007/s11554-021-01162-3

6. L. O. Rojas-Perez, **J. Martinez-Carranza**. "On-board processing for autonomous drone racing: An overview". Integration. May, 2021. **JCR Q4.**
https://doi.org/10.1016/j.vlsi.2021.04.007

7. J. A. J. Osuna-Coutiño, **J. Martinez-Carranza**. "Volumetric structure extraction in a single image". The Visual Computer. May, 2021. **JCR Q2.**
https://doi.org/10.1007/s00371-021-02163-w

8. S. A. Serrano, E. Santiago, **J. Martinez-Carranza**, E. F. Morales, E. Sucar. "Knowledge-Based Hierarchical POMDPs for Task Planning". Journal of Intelligent & Robotic Systems. April, 2021. **JCR Q2.**
https://doi.org/10.1007/s10846-021-01348-8

9. A. Matus-Vargas, G. Rodriguez-Gomez, **J. Martinez-Carranza**. "Ground effect on rotorcraft unmanned aerial vehicles: A review". Intelligent Service Robotics. January, 2021. **JCR Q3.**
https://doi.org/10.1007/s11370-020-00344-5

10. **J. Martinez-Carranza**, C. Rascón. "A Review on Auditory Perception for Unmanned Aerial Vehicles". Special Issue "UAV-Based Sensing Techniques, Applications and Prospective". Sensors. December, 2020. **JCR Q1**.
https://doi.org/10.3390/s20247276

11. J. M. Fortuna-Cervantes, M. T. Ramírez-Torres , **J. Martinez-Carranza**, J. S. Murguía-Ibarra, M. Mejía-Carlos. "Object Detection in Aerial Navigation using Wavelet Transform and Convolutional Neural Networks: A First Approach". Programming and Computer Software. Vol 46. No. 8, pp. 536-547. December, 2020. **JCR Q4.**
https://doi.org/10.1134/S0361768820080113

12. L. O. Rojas-Perez, **J. Martinez-Carranza**. "DeepPilot: A CNN for Autonomous Drone Racing". Special Issue "UAV-Based Sensing Techniques, Applications and Prospective". Sensors. August, 2020. **JCR Q1**. https://doi.org/10.3390/s20164524

13. A. López-Luna, I. Cruz-Vega, **J. Martinez-Carranza**. "Vertical Surface Contact with a Micro Air Vehicle". International Journal of Micro Air Vehicles. June, 2020. **JCR Q3**. https://doi.org/10.1177/1756829320938745

14. A. Osuna-Coutiño, **J. Martinez-Carranza**. "Structure Extraction in Urbanized Aerial Images from a Single View Using a CNN-based Approach". International Journal of Remote Sensing. March, 2020. **JCR Q2.** https://doi.org/10.1080/01431161.2020.1767821

15. A. A. Cabrera Ponce, **J. Martinez-Carranza**, C. Rascon-Estebane. "Detection of nearby UAVs using a multi-microphone array on board a UAV". Special Issue of the Best Papers in the International Micro Air Vehicle Competition (IMAV) 2019, extended versions. International Journal of Micro Air Vehicles. May, 2020. **JCR Q3.** https://doi.org/10.1177/1756829320925748

16. R. De Lima, A. A. Cabrera-Ponce, **J. Martinez-Carranza.** "Parallel Hashing-based Matching for Real-Time Aerial Image Mosaicing". Journal of Real-Time Image Processing. March, 2020. **JCR Q3.** https://doi.org/10.1007/s11554-020-00959-y

17. J. P. Sanchez-Rodriguez, A. Aceves-Lopez, **J. Martinez-Carranza,** G. Flores Wysocka. "Onboard Plane-wise Mapping using Super-Pixels and Stereo Vision for Autonomous Flight of a Hexacopter". Intelligent Service Robotics. January, 2020. **JCR Q3.** https://doi.org/10.1007/s11370-020-00312-z

18. A. A. Cabrera-Ponce, L. O. Rojas-Perez, J.A. Carrasco-Ochoa, J. F. Martinez-Trinidad, **J. Martinez-Carranza**. "Gate Detection for Micro Aerial Vehicles using a Single Shot Detector". IEEE Latin America Transactions. December, 2019. **JCR Q4.** https://doi.org/10.1109/TLA.2019.9011550

19. A. Matus-Vargas, G. Rodriguez-Gomez, **J. Martinez-Carranza**. "A Monocular SLAM-based Controller for Multirotors with Sensor Faults under Ground Effect". Sensors 2019, 19(22), 4948. November, 2019. **JCR Q1.** https://doi.org/10.3390/s19224948

20. L. Pellegrin, **J. Martinez-Carranza**. "Towards Depth Estimation in a Single Aerial Image". International Journal of Remote Sensing. August, 2019. **JCR Q2.** https://doi.org/10.1080/01431161.2019.1681601

21. C. Rascon, O. Ruiz-Espitia, **J. Martinez-Carranza**. "On the Use of the AIRA-UAS Corpus to Evaluate Audio Processing Algorithms in Unmanned Aerial Systems". Sensors 2019, 19(18), 3902. September, 2019. **JCR Q1.** https://doi.org/10.3390/s19183902

22. E. Jaramillo-Cabrera, E. F. Morales, **J. Martinez-Carranza**. "Enhancing object, action, and effect recognition using probabilistic affordances". Adaptive Behavior. April, 2019. **JCR Q3.** https://doi.org/10.1177/1059712319839057

23. J. A. J. Osuna-Coutiño, **J. Martinez-Carranza**. "High Level 3D Structure Extraction from a Single Image Using a CNN-Based Approach". Sensors 2019, 19, 563. January, 2019. **JCR Q1.** https://doi.org/10.3390/s19030563

24. H. Moon, **J. Martinez-Carranza**, T. Cieslewski, M. Faessler, D. Falanga, A. Simovic, D. Scaramuzza, S. Li, M. Ozo, C. De Wagter, G. de Croon, S. Hwang, S. Jung, H. Shim, H. Kim, M. Park, T. Au & S. J. Kim. "Challenges and Implemented Technologies Used in Autonomous Drone Racing". Intelligent Service Robotics. January, 2019. **JCR Q3.** https://doi.org/10.1007/s11370-018-00271-6

25. R. de Lima, **J. Martinez-Carranza,** A. Morales-Reyes, R. Cumplido. "Improving the construction of ORB through FPGA-based acceleration". Machine Vision and Applications. 28: 525. March, 2108.. **JCR Q3.** https://doi.org/10.1007/s00138-017-0851-5

26. R. de Lima, **J. Martinez-Carranza,** A. Morales-Reyes, W. Mayol-Cuevas. "Toward a smart camera for fast high-level structure extraction". Journal of Real-Time Image Processing. July, 2017. **JCR Q3.** https://doi.org/10.1007/s11554-017-0704-5

27. C. Cruz-Martinez, **J. Martínez-Carranza,** W. Mayol-Cuevas. "Real-time enhancement of sparse 3D maps using a parallel segmentation scheme based on superpixels". Journal of Real-Time Image Processing. July, 2017. **JCR Q3.**
https://doi.org/10.1007/s11554-017-0707-2

28. H. J. Escalante, V. Ponce-López, S. Escalera, X. Baró, A. Morales-Reyes, **J. Martínez-Carranza**. Evolving weighting schemes for the Bag of Visual Words. Neural Computing and Applications, pp. 1--11. March, 2016. **JCR Q1.**
https://doi.org/10.1007/s00521-016-2223-x

29. **J. Martínez-Carranza**, R. Bostock, S. Willcox, I. Cowling, W. Mayol-Cuevas. "Indoor MAV Auto-Retrieval Using Fast 6D Relocalisation". Advanced Robotics. Pages 119-130. Volume 30, Issue 2. October, 2015. **JCR Q4.**
https://doi.org/10.1080/01691864.2015.1094409

30. H. J. Escalante, M. García-Limón, A. Morales-Reyes, M. Graff, M. Montes-y-Gómez, E. F. Morales, **J. Martinez-Carranza**. "Term-Weighting Learning via Genetic Programming for Text Classification". Knowledge-based Systems Journal, Elsevier. Volume 83, Pages 176–189. July, 2015. **JCR Q1.**
https://doi.org/10.1016/j.knosys.2015.03.025

Book Chapters

1. O. Alquisiris-Quecha, J. **Martinez-Carranza**. Video Stabilization of the NAO Robot Using IMU Data. In: Koubaa A. (eds) Robot Operating System (ROS). Studies in Computational Intelligence, vol 831. Springer, Cham. 2020. **DOI:** https://doi.org/10.1007/978-3-030-20190-6_6

2. R. Rill-García, **J. Martinez-Carranza**, E. Granados, M. Morales. Path Planning and Following for an Autonomous Model Car Using an "Eye in the Sky". In: Koubaa A. (eds) Robot Operating System (ROS). Studies in Computational Intelligence, vol 831. Springer, Cham. 2020. **DOI:** https://doi.org/10.1007/978-3-030-20190-6_2

3. A. Matus-Vargas, G. Rodriguez-Gomez, **J. Martinez-Carranza**. Parametric Optimization for Nonlinear Quadcopter Control Using Stochastic Test Signals. In: Koubaa A. (eds) Robot Operating System (ROS). Studies in Computational Intelligence, vol 831. Springer, Cham. 2020. **DOI:** https://doi.org/10.1007/978-3-030-20190-6_3

Other Peer-Reviewed International Journals

1. L. Oyuki Rojas-Perez, **Jose Martinez-Carranza.** "Autonomous Drone Racing with an Opponent: A First Approach". "Computación y Sistemas" Journal. ISSN 2007-9737. Vol 24, No 3. Mexico City, Mexico. October, 2020.

2. Manuel Lopez-Garcia, **Jose Martinez-Carranza**. "A First CNN-based Approach Towards Autonomous Flight for Object Lifting". "Computación y Sistemas" Journal. ISSN 2007-9737. Vol 24, No 3. Mexico City, Mexico. October, 2020.

3. Rafael Lopez Campos, L.Oyuki Rojas-Perez, **Jose Martinez-Carranza.** "Following and Overtaking: A Policy for Autonomous Car Driving". "Computación y Sistemas" Journal. ISSN 2007-9737. Vol 24, No 3. Mexico City, Mexico. October, 2020.

4. **J. Martínez-Carranza**, M. E. Miranda-Varela, L. O. Rojas-Pérez, A. A. Cabrera-Ponce, E. J. Sosa-Cerón, R. Domínguez-Colín. "An Open-Source-Based Software to Capture Aerial Images and Video Using Drones." Reality, data and space, International journal of Statistics and Geography. Volume 11, Issue 1. Pages 25-42. ISSN 2007-2961. March, 2020.

Peer-Reviewed International Conference Papers

1. O. Alquisiris-Quecha, **J. Martinez-Carranza**. "Metric Localisation for the NAO Robot". Mexican Conference on Pattern Recognition (MCPR) 2021. Mexico, Jun 2021.

2. C. Osorio Quero, D. Durini, R. Ramos-Garcia, J. Rangel-Magdaleno, **J. Martinez-Carranza**. "Towards a 3D Vision System based on Single-Pixel imaging and indirect Time-of- Flight for drone applications". 2020 17th International Conference on Electrical Engineering, Computing Science and Automatic Control. Mexico City, Mexico. November, 2020.

3. David Carcaño-Ventura, L. Oyuki Rojas-Perez, **Jose Martinez-Carranza**, "Exploring the use of RatSLAM for Drone Localization". 19th Mexican International Conference on Artificial Intelligence (MICAI). Mexico City, Mexico. October, 2020.

4. A. Lopez Luna, I. Cruz-Vega, **J. Martinez-Carranza,**. "Aerial Interaction Control in Outdoor Environments for a Micro Aerial Vehicle Equipped with a Robotic Arm". The 2020 International Conference on Unmanned Aircraft Systems (ICUAS). Athens, Grece. June, 2020.

5. A. A. Cabrera Ponce, **J. Martinez-Carranza**. "Onboard CNN-based Processing for Target Detection and Autonomous Landing for MAVs". Mexican Conference on Pattern Recognition (MCPR). Morelia, Michoacan, Mexico. June 2020.

6. C. Osorio Quero, D. Durini, R. Ramos-Garcia, J. Rangel-Magdaleno, **J. Martinez-Carranza**. "Evaluation of a 3D imaging vision system based on a single-pixel InGaAs detector and the time-of-flight principle for drones". Three-Dimensional Imaging, Visualization, and Display 2020. SPIE. International Society for Optics and Photonics. Vol. 11402. April, 2020.

7. C. Osorio, D. Durini, R. Ramos-García, J. Rangel-Magdaleno, **J. Martinez-Carranza**, J. L. Olvera, A. Corona. "Implementation of a hyperspectral integrated vision system combining radar technology and single-pixel optical principle for unmanned ground vehicles (UGV)". Radar Sensor Technology XXIV. SPIE. International Society for Optics and Photonics. Vol. 11408. April, 2020.

8. C. Osorio Quero, D. Durini, R. Ramos-Garcia, J. Rangel-Magdaleno, **J. Martinez-Carranza**. "Hardware parallel architecture proposed to accelerate the orthogonal matching pursuit compressive sensing reconstruction". Computational Imaging V. SPIE. International Society for Optics and Photonics. Vol. 11396. April, 2020.

9. L. O. Rojas-Perez, **J. Martinez-Carranza.** "Temporal CNN based Learning for Autonomous Drone Racing". IEEE 5th Workshop on Research, Education and Development of Unmanned Aerial Systems (RED-UAS). IEEE, Cranfield, UK. November, 2019.

10. A. Matus-Vargas, G. Rodriguez-Gomez, **J. Martinez-Carranza.** "Sensor Fault Mitigation for MAVs under Ground Effect". IEEE 5th Workshop on Research, Education and Development of Unmanned Aerial Systems (RED-UAS). IEEE, Cranfield, UK. November, 2019.

11. A. A. Cabrera-Ponce, **J. Martinez-Carranza**. "Aerial Geo-Localisation for MAVs using PoseNet". IEEE 5th Workshop on Research, Education and Development of Unmanned Aerial Systems (RED-UAS). IEEE, Cranfield, UK. November, 2019.

12. J. Arturo Cocoma-Ortega, L. Oyuki Rojas-Perez, A. A. Cabrera-Ponce, **J. Martinez-Carranza**. "Overcoming the Blind Spot in CNN-based Gate Detection for Autonomous Drone Racing". IEEE 5th Workshop on Research, Education and Development of Unmanned Aerial Systems (RED-UAS). IEEE, Cranfield, UK. November, 2019.

13. A. Lopez Luna, **J. Martinez Carranza**, I. Cruz Vega. "Towards Aerial Interaction of MAVs in GPS-Denied Environments". IEEE 5th Workshop on Research, Education and Development of Unmanned Aerial Systems (RED-UAS). IEEE, Cranfield, UK. November, 2019.

14. J. A. Cocoma-Ortega, **J. Martinez-Carranza**. "Towards High-Speed Localisation for Autonomous Drone Racing". 18th Mexican International Conference on Artificial Intelligence (MICAI). Xalapa, Veracruz, Mexico. November, 2019.

15. O. Alquisiris-Quecha, **J. Martinez-Carranza**. "Depth Estimation using Óptical Flow and CNN for the NAO Robot". 18th Mexican International Conference on Artificial Intelligence (MICAI). Xalapa, Veracruz, Mexico. November, 2019.

16. D. S. Levkovits-Scherer, I. Cruz-Vega, **J. Martinez-Carranza**. "Real-time Monocular Vision-based UAV Obstacle Detection and Collision Avoidance in GPS-denied Outdoor Environments Using CNN MobileNet-SSD". 18th Mexican International Conference on Artificial Intelligence (MICAI). Xalapa, Veracruz, Mexico. November, 2019.

17. L. O. Rojas-Perez, **J. Martinez-Carranza**, "Flight Coordination of MAVs in GPS-denied Environments using a Metric Visual SLAM". 11th International Micro Air Vehicle Conference (IMAV). Madrid, Spain. October, 2019.

18. A. A. Cabrera-Ponce, **J. Martinez-Carranza,** C. Rascon. "Detection of nearby UAVs using CNN and Spectrograms", in 11th international micro air vehicle competition and conference (IMAV), Madrid, Spain, October, 2019.

19. J. A. Cocoma-Ortega, **J. Martinez-Carranza**, "CNN-based Drone Localization Approach for Autonomous Drone Racing". 11th International Micro Air Vehicle Conference (IMAV). Madrid, Spain. October, 2019.

20. A. Lopez-Lopez, **J. Martinez-Carranza**, I. Cruz. "Aerial Interaction Control Using Gain-Scheduling and PID for a Drone with a 2-DOF Arm ", in 11th international micro air vehicle competition and conference (IMAV), Madrid, Spain, October, 2019.

21. J. A. Cocoma-Ortega, **J. Martinez-Carranza**. "Towards a rodent tracking and behaviour detection system in real time". Mexican Conference on Pattern Recognition (MCPR). Queretaro, Mexico. June 2019.

22. J. A. J. Osuna-Coutiño, **J. Martinez-Carranza**. "A Binary descriptor Invariant to Rotation and Robust to Noise (BIRRN) for Floor Recognition". Mexican Conference on Pattern Recognition (MCPR). Queretaro, Mexico. June 2019.

23. A. Matus-Vargas, G. Rodriguez-Gomez, **J. Martinez-Carranza**. "Aerodynamic Disturbance Rejection Acting on a Quadcopter Near Ground". 6th International Conference on Control, Decision and Information Technologies (CODIT) 2019. Paris, France. April 2019.

24. J. A. J. Osuna-Coutiño, **J. Martinez-Carranza**. "Binary Patterns-Based Floor Recognition Suitable for Urban Scenes". 6th International Conference on Control, Decision and Information Technologies (CODIT) 2019. Paris, France. April 2019.

25. L. O. Rojas-Perez, R. Munguia-Silva, **J. Martinez-Carranza**, "Real-Time Landing Zone Detection for UAVs using Single Aerial Images". IMAV2018, 10th International Micro Air Vehicle Conference (IMAV). Melbourne, Australia. November, 2018.

26. L. Gonzalez-Guzman, **J. Martinez-Carranza**. "Automatic Combination of Line and Point Descriptors for Thermal Aerial Image Mosaicing." IMAV2018, 10th International Micro Air Vehicle Conference (IMAV). Melbourne, Australia. November, 2018.

27. R. Parlange, **J. Martinez-Carranza**, L.E. Sucar, B. Ren. "Vision-based Autonomous Navigation for Wind Turbine Inspection using an Unmanned Aerial Vehicle." IMAV2018, 10th International Micro Air Vehicle Conference (IMAV). Melbourne, Australia. November, 2018.

28. A. Lopez-Lopez, **J. Martinez-Carranza**, I. Cruz. "Towards Micro Aerial Manipulation Using a Computational Compensation Strategy". IMAV2018, 10th International Micro Air Vehicle Conference (IMAV). Melbourne, Australia. November, 2018.

29. A. Lopez-Lopez, I. Cruz-Vega**, J. Martinez-Carranza**. "Gain-Scheduling and PID Control for an Autonomous Aerial Vehicle with a Robotic Arm". IEEE Colombian Conference on Robotics and Automation. (CCRA). Barranquilla, Colombia. November, 2018.

30. **J. Martinez-Carranza,** L. O. Rojas-Perez, A. A. Cabrera Ponce, R. Munguia-Silva. "Combining Deep Learning and RGBD SLAM for Monocular Indoor Autonomous Flight". 15th Mexican International Conference on Artificial Intelligence (MICAI). Guadalajara, Jalisco, Mexico. October, 2018.

31. O. Ruiz-Espitia, **J. Martinez-Carranza,** C. Rascon-Estabane. "AIRA-UAS: an Evaluation Corpus for Audio". The 2018 International Conference on Unmanned Aircraft Systems (ICUAS). Dallas, Texas, USA. June, 2018.

32. R. Oves Garcia, L. Valentín-Coronado, **J. Martinez-Carranza**, L. E. Sucar. "A fast algorithm for robot localization using multiple sensing units". Mexican Conference on Pattern Recognition (MCPR). Puebla, Mexico. June 2018.

33. R. Munguia-Silva, **J. Martinez-Carranza**. "Autonomous Flight Using RGB-D SLAM with a Monocular Onboard Camera". 2018 International Conference on Electronics, Communications and Computers (CONIELECOMP). Cholula, México. February, 2018.

34. S. Dionisio-Ortega, L. O. Rojas-Perez, **J. Martinez-Carranza**, I. Cruz-Vega. "A Deep Learning Approach Towards Autonomous Flight in Forest Environments". 2018 International Conference on Electronics, Communications and Computers (CONIELECOMP). Cholula, México. February, 2018.

35. E. Zecua Corichi, **J. Martinez-Carranza,** Carlos Alberto Reyes-Garca Luis Villaseor-Pineda. "A Framework based on Eye-Movement Detection from EEG Signals for Flight Control of a Drone". 14th Mexican International Conference on Artificial Intelligence (MICAI). Ensenada, Mexico. November, 2017.

36. R. De Lima, **J. Martinez-Carranza**. "Real-Time Aerial Image Mosaicing Using Hashing-based Matching". IEEE 4th Workshop on Research, Education and Development of Unmanned Aerial Systems (RED-UAS). Linköping, Sweden. October, 2017.

37. B. Hernández, **J. Martinez-Carranza,** J.J. Rangel-Magdaleno. "Keeping a Moving Target within the Field of View of a Drone's Onboard Camera via Stochastic Estimation". IEEE 4th Workshop on Research, Education and Development of Unmanned Aerial Systems (RED-UAS). Linköping, Sweden. October, 2017.

38. L. O. Rojas-Perez, **J. Martinez-Carranza**. "Metric Monocular SLAM and Colour Segmentation for Multiple Obstacle Avoidance in Autonomous Flight". IEEE 4th Workshop on Research, Education and Development of Unmanned Aerial Systems (RED-UAS). Linköping, Sweden. October, 2017.

39. A. A. Cabrera Ponce, **J. Martinez-Carranza**. "A Vision-Based Approach for Autonomous Landing". IEEE 4th Workshop on Research, Education and Development of Unmanned Aerial Systems (RED-UAS). Linköping, Sweden. October, 2017.

40. E. Zecua Corichi, **, J. Martinez-Carranza,** Carlos Alberto Reyes-Garcia Luis Villaseñor-Pineda. "Real-Time Prediction of Altered States in Drone Pilots Using Physiological Signals". IEEE 4th Workshop on Research, Education and Development of Unmanned Aerial Systems (RED-UAS). Linköping, Sweden. October, 2017.

41. A. Matus-Vargas, G. Rodriguez-Gomez, **J. Martinez-Carranza**. "Numerical Optimization Techniques for Nonlinear Quadrotor Control". The 2017 International Conference on Unmanned Aircraft Systems (ICUAS). Miami, USA. June, 2017.

42. J. A. Osuna-Coutiño, **J. Martinez-Carranza**, M. Arias-Estrada, W. Mayol-Cuevas. "Dominant Plane Recognition in Interior Scenes from a Single Image. International Conference on Pattern Recognition". Cancun (ICPR), Mex. Dec, 2016.

43. J. A. Osuna-Coutiño, C. Cruz Martínez, **J. Martinez-Carranza**, M. Arias-Estrada, W. Mayol-Cuevas. "I want to change my floor: dominant plane recognition from a single image to augment the scene". Adjunct proceedings of the 15th IEEE International Symposium on Mixed and Augmented Reality (ISMAR). Merida, Mex. Sept, 2016.

44. C. Cruz Martínez, **J. Martinez-Carranza**, W. Mayol-Cuevas. M. Arias-Estrada. "Enhancing 3D Mapping via Real-Time Superpixel-based Segmentation". Adjunct proceedings of the 15th IEEE International Symposium on Mixed and Augmented Reality (ISMAR). Merida, Mex. Sept, 2016.

45. R. De Lima, **J. Martinez-Carranza**, A. Morales-Reyes, W. Mayol-Cuevas. "On Combining a Semi-Calibrated Stereo Camera and Massive Parallelism for Fast Plane Extraction". Adjunct proceedings of the 15th IEEE International Symposium on Mixed and Augmented Reality (ISMAR). Merida, Mex. Sept, 2016.

46. A. Perez, **J. Martinez-Carranza,** A. Morales Reyes, R. Cumplido. "An FPGA Architecture to Accelerate the Burrows Wheeler Transform by Using a Linear Sorter". IEEE 23 rd Reconfigurable Architectures Workshop (RAW), Chicago, Illinois, USA. May, 2016.

47. R. De Lima, **J. Martinez-Carranza,** A. Morales Reyes, R. Cumplido. "Accelerating the Construction of BRIEF descriptors using an FPGA-based Architecture". 2015 International Conference on Reconfigurable Computing and FPGAs (ReConfig). Cancún, México. December, 2015.

48. **J. Martinez-Carranza,** F. Marquez, E.O. García Rodriguez, A. Muñoz-Meléndez, W. Mayol-Cuevas. "On Combining Wearable Sensors and Visual SLAM for Remote Controlling of Low-cost Micro Aerial Vehicles". IEEE 3rd Workshop on Research, Education and Development of Unmanned Aerial Systems (RED-UAS). Cancún, México. November, 2015.

49. **J. Martinez-Carranza,** Nils Lowen, F. Marquez, E.O. García Rodriguez, W. Mayol-Cuevas. "Towards Autonomous Flight of Micro Aerial Vehicles using ORB-SLAM". IEEE 3rd Workshop on Research, Education and Development of Unmanned Aerial Systems (RED-UAS). Cancún, México. November, 2015.

50. **J. Martinez-Carranza,** E.O. García Rodriguez, H. Jair Escalante, W. Mayol Cuevas. "Towards Autonomous Flight of Low-Cost MAVs by Using a Probabilistic Visual Odometry Approach". 14th Mexican International Conference on Artificial Intelligence (MICAI). Cuernavaca, Mexico. October, 2015.

51. V. Lobato-Ríos, A. Muñoz-Meléndez, **J. Martinez-Carranza**. "A NAO-based Intelligent Robotic System for a Word Search-like Game". The Fourth International Conference on Intelligent Systems and Applications (INTELLI). St. Julians, Malta. October, 2015.

52. H. Jair Escalante, **J. Martinez-Carranza**, S. Escalera, V. Ponce and X. Baro. "Improving Bag of Visual Words Representations with Genetic Programming". IEEE International Joint Conference on Neural Networks (IJCNN). Ireland, UK. July, 2015.

53. **J. Martinez-Carranza** A. Calway and W. Mayol-Cuevas. "Enhancing 6D visual relocalisation with depth cameras". Proceedings of the International Conference on Intelligent Robots and Systems (IROS). Tokyo, Japan. November, 2013.

54. **J. Martinez-Carranza**, W. Mayol-Cuevas. "Real-Time Continuous 6D Relocalisation for Depth Cameras". Workshop on Multi VIew Geometry in RObotics (MVIGRO), in conjunction with Robotics Science and Systems (RSS). Berlin, Germany. June, 2013.

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55. O. Haines, **J. Martinez-Carranza** and A. Calway. "Visual mapping using learned structural priors". Proceedings of the International Conference on Robotics and Automation (ICRA). Karlsruhe, Germany. May, 2013.
56. **J. Martinez-Carranza**, A. Calway. "Efficient Visual Odometry Using a Structure-Driven Temporal Map". Proceedings of the International Conference on Robotics and Automation (ICRA). Minnesota, USA. May, 2012.
57. **J. Martinez-Carranza**, A. Calway. "Unifying Planar and Point Mapping in Monocular SLAM". Proceedings of the British Machine Vision Conference (BMVC). Aberystwyth, UK. September, 2010.
58. **J. Martinez-Carranza**, A. Calway. "Efficiently Increasing Map Density in Visual SLAM Using Planar Features with Adaptive Measurements". Proceedings of the British Machine Vision Conference (BMVC). London, UK. September, 2009.
59. **J. Martinez-Carranza**, A. Calway. "Appearance Based Extraction of Planar Structure in Monocular SLAM". Proceedings of the Scandinavian Conference on Image Analysis (SCIA). Oslo, Norway. June, 2009.
60. **J. Martínez-Carranza**, L. Altamirano. "FPGA-based Pipeline Architecture to Transform Cartesian Images into Foveal Images by Using a new Foveation Approach". Proceedings of the International Conference on Reconfigurable Computing and FPGAs (ReConfig). Published by IEEE. San Luis Potosí, México. September 2006.
61. **J. Martínez-Carranza**, L. Altamirano. "A New Foveal Cartesian Geometry Approach used for Object Tracking". Proceedings of the 3rd IASTED International Conference on Signal Processing, Pattern Recognition and Applications (SPPRA) 2006. Published by ACTA Press. Innsbruck, Austria. February 2006.
62. **J. Martínez-Carranza**, R. Cumplido, C. Feregrino. "An FPGA Parallel Sorting Architecture for the Burrows Wheeler Transform". Proceedings of the International Conference on Reconfigurable Computing and FPGAs (ReConfig). Puebla, México. Published by IEEE. Puebla, México. September 2005.
63. **J. Martínez-Carranza**, O. Fuentes. "Using C4.5 as Variable Selection Criterion in Classification Tasks". Proceedings of the 9th IASTED International Conference on Artificial Intelligence and Soft Computing (ASC). Published by ACTA Press, pp. 171-176. Benidorm, Spain. September 2005.

Peer-Reviewed National Conference Papers

1. E. Salazar-Hidalgo, J. Castañeda-Camacho, C. Martínez-Torres, **J. Martinez-Carranza**. "Model-based predictive control for trajectory tracking of a quadrotor". Congreso Nacional de Control Automático, (CNCA) 2020. Asociación Mexicana de Control Automático (AMCA). Guanajuato, México. Octubre, 2020.
2. E. Salazar-Hidalgo, J. Castañeda-Camacho, C. Martínez-Torres, **J. Martinez-Carranza**. "Seguimiento de trayectorias de un robot móvil diferencial a través del sistema operativo robótico ROS". Congreso Nacional de Mecatrónica. Publicado en las memorias: Desarrollos con Enfoque Mecatrónico. Ingeniería Mecatrónica Aplicada. Asociación Mexicana de Mecatrónica A. C. 2020. ISBN: 978-607-9394-22-6. Querétaro, México. Octubre, 2020.
3. G. Rodriguez-Gomez, A. Matus Vargas, **J. Martinez-Carranza**. "Quadrotor Control Simulation with Multirate Integration Methods". Congreso Nacional de Control Automático, (CNCA) 2019. Asociación Mexicana de Control Automático (AMCA). Puebla, México. Octubre, 2019.
4. A. Muñoz Silva, G. Rodriguez-Gomez, **J. Martinez-Carranza**. Hovering Controller for a Quadrotor Using Stochastic Test Signals. Congreso Nacional de Control Automático (CNCA). Monterrey, Nuevo Leon, Mexico. June, 2017.
5. R. Munguia Silva, L. O. Rojas Pérez, A. A. Cabrera Ponce, **J. Martinez-Carranza**. On Combining a PID Controller and the Vicon System for Micro-Aerial Vehicles. Congreso Mexicano de Inteligencia Artificial. May 2016.
6. E. Zecua Corichi, I. Caballero Ledesma, **J. Martinez-Carranza**, C. A Reyes-Garcia. Visual Stimuli Classification to Control Drones. Congreso Mexicano de Inteligencia Artificial. May 2016.
7. **J. Martinez-Carranza**, L. Valentin, F. Márquez-Aquino, J. C. González-Islas y N. Loewen. Obstacle Detection during Autonomous Flight of Drones Using Monocular SLAM. Congreso Mexicano de Inteligencia Artificial. May 2016.

8. V. Lobato-Ríos, **J. Martinez-Carranza**, A. Muñoz-Meléndez. Towards Automatic Classification of Age-based Groups by Using a Bayesian Network Approach. Taller de Computación Clínica e Informática Médica, Encuentro Nacional de Ciencias de la Computación (ENC). Ensenada, Mexico. October 2015.
9. R. Mastachi, **J. Martinez-Carranza,** E. Morales, D. Figueroa, E. Méndez. Navegación Autónoma para Drones con Detección de Objetos por Visión Computarizada. Congreso Nacional de Ciencias de la Computación. (CONACIC). Puebla, México. October, 2015.
10. **J. Martínez-Carranza**, A. Muñoz. Juego de Dominó para Cuatro Jugadores utilizando Agentes Artificiales. Workshop on automatic deduction and reasoning techniques. VI Mexican International Conference in Computer Science (ENC). ISBN 969-863-859-5. pp. 51-56. Puebla. September 2005.
11. M. Martín, **J. Martínez-Carranza**. Sistema para la Visualización y Análisis de Imágenes Médicas. XXVIII Congreso Nacional de Ingeniería Biomédica (CNIB). Sociedad Mexicana de Ingeniería Biomédica (SOMIB). Acapulco. August 2005.
12. **J. Martínez-Carranza**, M. Martín. Sistema para la Visualización y Análisis de Imágenes Médicas Digitalizadas (SVAIMD). First National Congress in Computer Science, ISBN 968-863-798-X. pp. 178- 181, Puebla. November 2003.

Other Peer-Reviewed Reports in International Events

1. J. A. Cocoma-Ortega, L O. Rojas-Perez, **J. Martinez-Carranza.** "A CNN-Inertial-based Odometry for Agile 6D Pose Estimation." IROS 2020 FPV Drone Racing VIO competition Results. Organised as part of the Workshop on "Perception, Learning, and Control for Autonomous Agile Vehicles", part of The International Conference on Intelligent Robots and Systems (IROS) 2020. Vancouver, Canada. October, 2020. https://fpv.ifi.uzh.ch/iros-2020-fpv-drone-racing-vio-competition-results/
2. L. O. Rojas-Perez, **J. Martinez-Carranza.** "QuetzalC++ Team-Results for Final Tier 1". Game of Drones Competition. NeuRIPS 2019. December, 2019. https://microsoft.github.io/AirSim-NeurIPS2019-Drone-Racing/_files/QuetzalC++.pdf
3. L. Enrique Sucar, E. Morales, **J. Martinez-Carranza**, L. V. Coronado, D. Carrillo, F. Marquez, and J.C. Gonzalez. "Markovito's Team Description". RoboCup @home League Team Descriptions, Leipzig, Germany. June, 2016. http://www.ais.uni-bonn.de/robocup.de/2016/TDPs/AtHome/RoboCup_2016_AtHome_TDP_Markovito.pdf

Technical Reports

1. José Arturo Cocoma Ortega, **José Martínez-Carranza**. "Deep Learning for High-Frequency Camera Pose Estimation". Reporte Técnico No. 673. INAOE. Diciembre, 2020.
2. A. Matus-Vargas, Gustavo Rodríguez-Gómez, **José Martínez-Carranza**. "Quadrotor Flight in Constrained Indoor Environments". Technical Report No. CCC-17-005. INAOE. November, 2017.
3. A. Osuna-Coutiño, **José Martínez-Carranza**. "High-Level Structure Extraction from a Single Image". Technical Report CCC-17-004. INAOE. July, 2017.
4. E. E. Gómez-López, Israel Cruz-Vega, **José Martínez-Carranza**. "Diseño y construcción de un brazo robótico de 4 grados de libertad". Technical Report 648. INAOE. June, 2017.

Other Academic Publications

1. **J. Martinez-Carranza (Ed.)**. "IMAV 2021 Competition Rules for Indoor and Outdoor Competitions, and Special Challenges". International Micro Air Vehicle Conference and Competition (IMAV) 2021. Puebla, México. March, 2020.

Dissemination of Science Articles

1. L. O. Rojas-Perez, **J. Martinez-Carranza.** "Redes Neuronales Convolucionales para Pilotaje Autónomo en Carrera de Drones". Komputer Sapiens. ISSN 2007-0691. Año XIII, Volumen I. 2021. (CONACYT Index).
2. **J. Martinez-Carranza. "**Drones inteligentes: del 'hobby' a la investigación. Komputer Sapiens. ISSN 2007-0691. Año X, Volumen III. 2021. (CONACYT Index).

3. C. Martínez Torres, M. L. Abundis de la Mora, J. P. Loredo Pineda, **J. Martínez Carranza**, S. Kabata. "Uso de drones para exploración e inspección de sitios arqueológicos". Komputer Sapiens. ISSN 2007-0691. Año X, Volumen III. 2019. (CONACYT Index).
4. **J. Martinez-Carranza**. "DJI: dominio y riesgo". Saberes y Ciencia México. No. 90. August, 2019.
5. F. Márquez-Aquino, **J. Martinez-Carranza. "**Visión Artificial y Sensores Vestibles para Controlar Drones". Komputer Sapiens. ISSN 2007-0691. Año VIII, Volumen I. 2016. (CONACYT Index).
6. Eduardo Morales, **J. Martínez-Carranza**. "Robots y Drones en Nuestra Vida Diaria". Chapter Book in "Ciencia Hacia el Futuro". Published by the Council from Veracruz for Scientific Research and Technological Development in collaboration with the University of Veracruz. March, 2017.
7. **J. Martinez-Carranza**. "Un dron que entregue un paquete podría estar a la vuelta de la esquina". Saberes y Ciencia México. Número 38. April, 2015.

Projects

Projects as Principal Investigator
1. **Using Deep Learning for Intelligent Autonomous Drone Tasks**
   Computer Science Department
   Instituto Nacional de Astrofísica Óptica y Electrónica
   Funder: Laboratorio Nacional de Supercómputo del Sureste de México LNS.
   Funding: Supercomputer Access for 1 year.
   April 2019 - April 2020.
2. **System for Recording and Processing of Aerial Video and Photography with Drones and Light Planes**
   Computer Science Department
   Instituto Nacional de Astrofísica Óptica y Electrónica
   Funder: CONACYT-INEGI Fund. **Project No. 268528.**
   Funding: £65,000.00 ~ 1'570,197.12 mxn
   March 2017 – February, 2019 (2 years).
3. **RAFAGA: Robust Autonomous Flight of unmanned Aerial vehicles in Gps-denied outdoor Areas**
   Computer Science Department
   Instituto Nacional de Astrofísica Óptica y Electrónica
   Funder: Royal Society-Newton Advanced Fellowship **Ref, NA140454**, UK
   Funding: £74,000.00 ~ 1'819,678.5 mxn
   March, 2015 – February, 2018 (3 years).

Projects as Collaborator
1. **Markovito: a service robot.**
   Scientific collaboration
   Computer Science Department.
   Instituto Nacional de Astrofísica Óptica y Electrónica.
   Funder: various sources.
   January, 2015 – 2018.
2. **PUCE-2: Precise navigation of UAVs in Complex Environments.**
   Research Assistant/Associate.
   Computer Science Department. University of Bristol, UK.
   Funder: Defence Science and Technology Laboratory (DSTL).
   February, 2014 - September, 2014.
   Funding: £94,986.
3. **Smart Boomerang: Teach, Blog and Repeat for an Inspection Flying Robot.**
   Research Assistant/Associate.
   Computer Science Department. University of Bristol, UK.
   Funder: Technology and Science Board (now Innovative UK) Service Robotics call.
   September, 2013 - August, 2014.
   Funding: £132,000.
4. **PUCE: Precise navigation of UAVs in Complex Environments.**
   Research Assistant.
   Computer Science Department. University of Bristol, UK.
   Funder: Defence Science and Technology Laboratory (DSTL).
   August, 2012 - August, 2013.
   Funding: £90,000.

5. **Real-Time Visual Mapping for the Humanoid Robot Roboray.**
   Part-time Research Assistant.
   Computer Science Department. University of Bristol.
   Funder: SAMSUNG Advanced Institute of Technology.
   May, 2011 - April, 2012.
   Funding: 150,000 USD.
6. **Machine Vision System to Measure the Behaviour of the Mexican Fruit Fly.**
   Lead Programmer.
   Computer Vision Laboratory.
   Instituto Nacional de Astrofísica Óptica y Electrónica.
   Funder: UCDAVIS University of California, Davis USA and El Colegio de la Frontera Sur ECOSUR, México.
   February - July, 2007.
7. **OptoElectronic Sight System - Garfio 2.0.**
   Lead Programmer.
   Computer Vision Laboratory.
   Instituto Nacional de Astrofísica Óptica y Electrónica.
   Funder: Secretariat of Navy Armed of Mexico.
   April, 2006 - March, 2007.
8. **Design and Construction of a Mobile Robot and Computational Test available in Internet for Master and Undergraduate Students**.
   Programmer.
   Faculty of Physics and Mathematics Sciences.
   Benemérita Universidad Autónoma de Puebla (BUAP)
   Funder: BUAP VIEP Project
   January - November, 2003.

Donations from Industry
Donations I have obtained for my research work:
1. Donation of a drone model DJI Matrice 100.
   Donation Monetary Value: 3,000 USD ~ 68,670.00 MXN.
   Donor Company: **Heliboss**
   September, 2015.
2. Donation of microcontroller computer boards and RGB-D RealSense mini cameras.
   Donation Monetary Value (estimated): 1,500 USD ~ 34,500.00 MXN.
   Donor Company: **Intel – Mexico**
   November, 2015.

Invited Talks

International Keynotes and Invited Talks

1. **Keynote:** "Intelligent drones that can see, hear and touch". Workshop 'Culture Drone: Multi-Cultural Human-Drone Interaction', as part of the 16th biennial Participatory Design Conference (PDC). Manizales, Colombia. June, 2020.
2. **Keynote:** "On the deployment of the Intelligent UAS in Smart Cities". TbarCampMx. Organised by T-Systems y Universidad de las Américas Puebla. Puebla, México. November, 2019.
3. **Keynote:** "Convolutional Neural Networks for Intelligent Unmanned Aerial Systems". 7th International Workshop on Numerical and Evolutionary Optimization (NEO). Saltillo, Chihuahua. Mexico. September, 2019.
4. **Plenary Talk:** "Building Better Bridges". Presented in the Third North American Center for Collaborative Development Conference "Climate Resilience and Clean Energy. Las Cruces, New Mexico. April, 2019.
5. **Invited Talk:** "Drones Inteligentes". Presented in the Research Seminar of Advanced Mining Technology Center. Faculty of Physics and Mathematical Sciences of the University of Chile. August, 2018.
6. **Invited Talk:** "Intelligent Drones". Presented to the Dynamic Intelligent Systems, Control and Optimization (Disco) Group led by Dr. Ren. Department of Mechanical Engineering. Texas Tech University. Lubbock, Texas. June, 2018.
7. **Invited Talk:** "Intelligent Drones and Drone Demonstration for Warehouse Inventory". Organised by CCL Corporación Colombiana de Logística. Cali, Colombia. May, 2018.
8. **Invited Talk**: "Filling the gaps of 3D mapping in Monocular SLAM: from inverse depth for planes to super-pixels". IROS 2017 International Workshop on Lines, Planes and Manhattan Models for 3-D Mapping (LPM 2017). Vancouver, Canada. September, 2017.
9. **Keynote**: "Autonomous Navigation and Exploration with Drones Using Vision". 24th International Conference on Electronics Communications and Computers. CONIELECOMP 2017. Puebla, Mexico. February, 2017.
10. **Invited Talks (3)** in the Seminar on Computer Vision of the Advanced Mining Technology Center. University of Chile. Santiago, Chile. June, 2016.
11. **Invited Talk**: "Autonomous sUAS: Emerging Technologies & Capabilities". Civil & Commercial Unmanned Aerial Systems Symposium 2015, Defense, AIE, Government, Industry, US, DOD. Washington, USA. October, 2015.
12. **Keynote**: "Towards Aerial Autonomous Navigation in Industrial Application". In the Intelligent Disaster Management Workshop organised by the Monterrey Institute of Technology and Higher Education (ITESM), Mexico and the University of Southampton, UK. Sponsored by the British Council. Queretaro, Mexico. February, 2015.

National Keynotes and Invited Talks

1. **Invited Talk**: Introducción a ambientes de simulación y herramientas de software para drones autónomos. Escuela de invierno de robótica (EIR) 2020-2021. Universidad Tecnológica del Sureste de Veracruz. Federación Mexicana de Robótica. January, 2021.
2. **Keynote:** "Redes Neuronales Convolucionales para Drones Inteligentes". IEEE Congreso Internacional de Ingeniería Mecatrónica, Electrónica y Automotriz. Morelos. México. Novembre, 2020.
3. **Keynote:** "Drones inteligentes, de la percepción a la interacción aérea". Congreso Internacional de Logística (CILOG) 2020. Organised by the Universidad Politécnica de San Luis Potosí. Mexico, October, 2020.
4. **Keynote:** "Inspección de Infraestructura Crítica con Drones Inteligentes" en el 2do Coloquio de Energía de la Universidad Politécnica de la Energía. Tula-Allende, Hidalgo. Mexico. October, 2020.
5. **Plenary Talk:** "Aprendizaje Profundo para Desarrollo de Drones Inteligentes". VIII Seminar on Learning and Applied Computational Intelligence. Organised by the Mexican Research Network on Applied Computational Intelligence. Mexico, October, 2020.
6. **Keynote:** "Drones que Aprenden". 5to Workshop de Cómputo Inteligente en las Organizaciones, CIO 2020. Organised by the Universidad Tecnológica de Nogales, Sonora. Mexico, September, 2020.
7. **Keynote**: "Drones Autónomos". 1er Congreso de Ingenierías Industria 4.0 "Impulsando la conectividad industrial". Instituto Tecnológico Superior de Ebano San Luis Potosí. Tecnológico Nacional de México. November, 2019.
8. **Keynote**: "Drones Inteligentes y Redes Neuronales". 10o Congreso de Ingenierías. Universidad del Valle de Puebla. Puebla, México. November, 2019.
9. **Keynote**: "Sistemas Aéreos No Tripulados Inteligentes". 7to Mexican Symposium on Unmanned Aerial Vehicles (SIMEVANT 2017). Secretariat of Navy. Instituto de Investigaciones y Desarrollo Tecnológico de la Armada de México (INIDETAM). Veracruz, México. November, 2019.
10. **Plenary Talk:** "Aprendizaje Profundo para Desarrollo de Drones Inteligentes". VII Seminar on Learning and Applied Computational Intelligence. Organised by the Faculty of Computer Sciences of the Benemerita Universidad Autonoma de Puebla and the Mexican Research Network on Applied Computational Intelligence. Puebla. Mexico, September, 2019.
11. **Invited Talk**: Sistema de Captura y procesamiento de video y fotografía aérea para drones y aviones ligeros. 5th Workshop: "Presentation of the research funded by the CONACYT-INEGI Fund". Organised by the National Institute of Statistics and Geography and the National Council of Science Technology, both from Mexico. Mexico City, August 27th - 29th, 2019.
12. **Keynote:** "Intelligent Unmanned Aerial Systems and their Applications". 11º Congreso Mexicano de Inteligencia Artificial, COMIA 2019. SMIA, CICSES-UT y la Universidad Autónoma de Nayarit. Tepic, Nayarit. México. June, 2019.
13. **Keynote**: "Vehículos Aéreos no Tripulados". Congreso Multidisciplinario Internacional: la Ingeniería como Fuerza Motriz para el Desarrollo Humano. Tecnológico Nacional de México. TEC de Teziutlán. Teziutlan, Puebla. México. October, 2018.
14. **Keynote**: "Drones Autónomos Inteligentes". XI Competencia Feria de Proyectos FEPRO 2018. Benemérita Universidad Autónoma de Puebla. Puebla, México. September, 2018.
15. **Plenary Talk:** "Drones Inteligentes". VI National Seminar on Learning and Applied Computational Intelligence. Organised by the Instituto Tecnológico de Culiacan and the Mexican Research Network on Applied Computational Intelligence. Culiacan, Sinaloa. Mexico, September, 2018.
16. **Keynote**: "Desarrollo Científico de Drones Autónomos". Multi-disciplinary International Congress. Instituto Tecnológico de Estudios Superiores de Apan. Apan, Hidalgo. México. Agosto, 2018.
17. **Keynote**: "Drones Inteligentes". Creating Engineers, 1er Congreso de Ingenierías. Universidad del Valle de México. Puebla, Puebla. Mexico. May, 2018.
18. **Invited Talk**: Sistema de Captura y procesamiento de video y fotografía aérea para drones y aviones ligeros. 4th Workshop: "Presentation of the research funded by the CONACYT-INEGI Fund". Organised by the National Institute of Statistics and Geography and the National Council of Science Technology, both from Mexico. Mexico City, February 21th - 23th, 2018.
19. **Keynote**: "Drones Inteligentes". 1er Congreso de Ingeniería en Sistemas Computacionales y Aplicaciones. Universidad Metropolitana Politécnica de Puebla. Puebla, México. November, 2017.

20. **Keynote**: "QuetzalC++, equipo de INAOE ganador del Primer Lugar en la Autonomous Drone Racing Competition 2017". 5to Mexican Symposium on Unmanned Aerial Vehicles (SIMEVANT 2017). LAFMIA UMI 3175, Secretariat of Navy. Centro de Investigación y Estudios Avanzados del Instituto Politécnico Nacional. Mexico City, México. October, 2017.

21. **Plenary Talk:** "Exhibición de Drones". V Seminar on Learning and Applied Computational Intelligence. Organised by the Centro Universitario de los Lagos and the Mexican Research Network on Applied Computational Intelligence. Lagos de Moreno, Mexico, September, 2017.

22. **Keynote:** "Vuelo Autónomo en ambientes sin GPS utilizando sensores visuales a bordo". 10º Coloquio Interdisciplinario de Posgrado. Universidad Popular Autónoma del Estado de Puebla. Mexico, June, 2017.

23. **Invited Talk**: Sistema de Captura y procesamiento de video y fotografía aérea para drones y aviones ligeros. 4th Workshop: "Presentation of the research funded by the CONACYT-INEGI Fund". Organised by the National Institute of Statistics and Geography and the National Council of Science Technology, both from Mexico. Mexico City, February 28th and March 1st, 2017.

24. **Plenary Talk**: "Robots Voladores: Retos y Aplicaciones". International Conference on Mechatronics, Electronics and Automotive Engineering. Morelos, Mexico. November, 2016.

25. **Invited Talk**: "QuetzalCuauhtli: Equipo Mexicano (INAOE) ganador del 2do lugar en la categoría Indoors de la International Micro Aerial Vehicle Conference and Competition (IMAV) 2016". 4th Mexican Symposium on Unmanned Aerial Vehicles (SIMEVANT 2016). LAFMIA-UMI, Secretariat of Navy. Centro de Investigación y Estudios Avanzados del Instituto Politécnico Nacional. Mexico City, México. November, 2016.

26. **Invited Talk**: "Drones que pueden ver". IEEE Day. Tecnológico de Monterrey, Campus Puebla. Puebla, Mexico. October, 2016.

27. **Plenary Talk:** "Visión Artificial para Robots Aéreos". Forum for Young Talents. Technological Innovation Park. Universidad Autónoma de Sinaloa. Sinaloa, Mexico. September, 2016.

28. **Plenary Talk**: "Extracción de estructuras y mapeo 3D a partir del procesamiento de imágenes en tiempo real". IV Seminar on Learning and Applied Computational Intelligence. Organised by the Universidad Michoacana de San Nicolás de Hidalgo and the Mexican Research Network on Applied Computational Intelligence. Michoacán, México. September, 2016.

29. **Invited Talk**: "Robots voladores: retos y aplicaciones". Infosecurity Summit. Centro Banamex, Mexico City, Mexico. April, 2016.

30. **Plenary Talk**. "Robots voladores: retos y aplicaciones". Mexican Tournament in Robotics. Organised by the Mexican Robotics Federation and the Universidad Politécnica de Victoria. Tamaulipas, México. March, 2016.

31. **Plenary Talk**: "Visual Processing for Robotic Platforms". XI Taller-Escuela de Procesamiento de Imágenes (PI'15) y V Taller de Reconocimiento Estadístico de Patrones (SPR'15). Center for Research in Mathematics (CIMAT). Guanajuato, México. November, 2015.

32. **Invited Talk**: "Localización 6D en Tiempo Real de Drones Utilizando Cámaras a Bordo". 3rd Mexican Symposium on Unmanned Aerial Vehicles (SIMEVANT 2016). LAFMIA UMI 3175, Secretariat of Navy. Centro de Investigación y Estudios Avanzados del Instituto Politécnico Nacional. Mexico City, México. November, 2015.

33. **Plenary Talk**: "Robots autónomos que pueden escuchar, ver, sujetar y hasta volar". IV Congreso Internacional Tecnologías de la información y Comunicación. Universidades Tecnológicas y Politécnicas Riviera Maya, Quintana Roo, 2015. October, 2015.

34. **Invited Talk**: "Visión artificial para robots autónomos". 3rd Symposium on Engineering. Universidad Autónoma de la Ciudad de México. Mexico City, Mexico. August, 2015.

35. **Plenary Talk**: "Lo que un sistema artificial puede hacer con un ojo o dos", 2do Congreso Internacional Tecnologías de la información y Comunicación. Universidad Politécnica de Tlaxcala. Tlaxcala, México. September, 2013.

Science Dissemination Talks and Outreach

1. **Invited Talk:** "Drones Inteligentes". 1ER Coloquio de Robótica y Control Aplicado a la Mecatrónica. Club de Robótica. Tecnológico Nacional de Mexico. Instituto Tecnológico de Veracruz. Veracruz, México. July, 2021.

2. **Keynote:** "Percepción Aérea con Drones". SEMANA TEC-INAOE 2021. Tecnológico Nacional de México. Instituto Tecnológico de Puebla. Puebla, México. March, 2021.

3. **Keynote:** "Carrera de Drones Autónomos". Ponente en la serie "Hablemos sobre IA". Alianza de Inteligencia Artificial de Centros Públicos CONACYT. Guanajuato, México. November, 2020.
4. **Keynote:** "Percepción Artificial para Drones Autónomos". Semana Cultural IESAC. Instituto de Estudios Superiores A. C. Incorporado a la BUAP. Puebla, México. October, 2020.
5. **Invited Talk**: "Percepción, la pieza clave para el desarrollo de la nueva generación de drones". Seminario Departamental. Centro de Investigación en Matemáticas (CIMAT). Guanajuato, Mexico. September, 2020.
6. **Invited Talk:** "Drones inteligentes que pueden ver, escuchar y tocar". Seminario de Investigación del Posgrado en Ciencias en Sistemas Digitales en el Centro de Investigación y Desarrollo de Tecnología Digital CITEDI-IPN, Tijuana B.C. México. June, 2020.
7. **Invited Talk:** "Drones Autónomos". Semana Cultural IESAC del Instituto de Estudios Superiores en Arquitectura y Diseño A. C. Puebla, México. Octubre, 2019.
8. **Invited Talk:** "Sistemas Aéreos No Tripulados e Inteligencia Artificial. Seminario de Computación y Ciencia de la Licenciatura en Tecnologías para la Información en Ciencias. Escuela Nacional de Estudios Superiores Unidad Morelia, UNAM. Morelia, México. Octubre, 2019.
9. **Invited Talk:** "El grupo de sistemas no tripulados del INAOE". Seminario de Ingeniería Eléctrica y Electrónica SIEE2019. Instituto Tecnológico de Aguascalientes. Tecnológico Nacional de México. Aguascalientes, México. Octubre, 2019.
10. **Invited Talk:** "Sistemas Aéreos no Tripulados Inteligentes y sus Aplicaciones". Programa de Verano de Investigación Científica en INAOE. Instituto Nacional de Astrofísica Óptica y Electrónica. Puebla, México. July, 2019.
11. **Keynote:** "Uso de drones para el monitoreo, inspección y vigilancia de terreno". Programa Explora edición 2019. Universidad Autónoma de Nayarit. Tepic, Nayarit. Junio, 2019.
12. **Participation in the Panel:** "Implicaciones éticas y filosóficas del uso de los avances recientes en Inteligencia Artificial y el Aprendizaje de Máquina". 11º Congreso Mexicano de Inteligencia Artificial COMIA 2019. SMIA, CICESE-UT y la Universidad Autónoma de Nayarit. Tepic, Nayarit. Junio, 2019.
13. **Invited Talk**. Jornada Chicas y ciencia: un espectro de oportunidades. INAOE y el Capítulo Estudiantil Women in Optics. Mayo, 2019.
14. **Invited Talk:** "Drones", programa de visitas impartida para el Instituto Tecnológico de Apizaco y para el Instituto Tecnológico de Poza Rica. INAOE. Mayo, 2019.
15. **Talk**: Master Channel Group, en el programa institucional de visitas de INAOE. Marzo, 2019.
16. **Talk and Demonstration**: "Laboratorios de Robótica", impartida para la Universidad Tecnológica de Gutiérrez Zamora, en el programa institucional de visitas de INAOE. Marzo, 2019.
17. **Invited Talk:** "Drones Inteligentes Autónomos". Club Rotario Puebla Centro Histórico Distrito 4185. Puebla, México. November, 2018.
18. **Invited Talk**: "Desarrollo y Aplicaciones de Drones Inteligentes". Weekly Seminar of the Master Program in Electronic Sciences, option on Automation. Facultad de Ciencias de la Electrónica. Universidad Autónoma de Puebla. Puebla, México. September, 2018.
19. **Keynote**: "Drones Inteligentes". 3er Taller de Mecatrónica Moderna. Universidad Politécnica de Tlaxcala. Tlaxcala, Puebla. Mexico. Julio, 2018.
20. **Invited Talk:** "Drones Inteligentes: Retos y Oportunidades." TecINAOE 2018. IEEE Rama Estudiantil IT Puebla. Instituto Tecnológico de Puebla. Puebla. Mexico. March, 2018.
21. **Invited Talk:** "Drones Inteligentes and Demonstration". Research Seminar of the PhD Program in Data Science of the Centro de Investigación e Innovación en Tecnologías de la Información y Comunicación INFOTEC. February, 2018.
22. **Exhibition of Drones**. **Escuela de Invierno de la Federación Mexicana de Robótica**. Casino Xalapeño. Xalapa, Veracruz. Mexico. February, 2018.
23. **Invited Talk:** "Plática sobre el trabajo y resultados obtenidos por el equipo QuetzalC++". **Honeywell-Technology Solutions (HTS)**. Ciudad de Mexico, Mexico. December, 2017.
24. **Participation in** "Puertas Abiertas". Instituto Nacional de Astrofísica Óptica y Electrónica. Puebla, Mexico. Noviembre, 2017.
25. **Invited Talk:** "Drones Autónomos en Ambientes sin GPS". Primera Semana Estatal Femenil de Ciencia y Tecnología. Universidad Tecnológica Minera de Zimapán. Zimapán, Hidalgo, Mexico. November, 2017.

26. **Participation in** Semana Nacional de Ciencia y Tecnología. Instituto Nacional de Astrofísica Óptica y Electrónica. Puebla, Mexico. November, 2017.
27. **Invited Talk:** "Visión Computacional para Vuelo de Drones Pequeños en Ambientes sin GPS". Semana Nacional de Ciencia y Tecnología. Universidad Politécnica de Tlaxcala. Tlaxcala, Mexico. November, 2017.
28. **Invited Talk in** Semana Nacional de Ciencia y Tecnología. Tecnológico Superior de Cananea. Cananea, Sonora. November, 2017.
29. **Invited Talk:** "Investigación sobre Drones". Semana Nacional de Ciencia y Tecnología. CBETIS no 106. Cananea, Sonora. November, 2017.
30. **Invited Talk.** "Conferencia de Robótica". Conferencia a grupo visitante del Instituto Politécnico Nacional. Instituto Nacional de Astrofísica Óptica y Electrónica. Puebla, Mexico. Octubre, 2017.
31. **Invited Talk:** "Visión Computacional para Vuelo de Drones Pequeños en Ambientes sin GPS". **T-Systems**. Puebla, Mexico. October, 2017.
32. **TEDx Invited Talk:** *"Drones que pueden ver"*. TEDxTecdeMtyPuebla. Tecnológico de Monterrey Campus Puebla. Puebla, México. August, 2017.
33. **Invited Talk: "**Drones Autónomos". Seminario Doctoral del Tecnológico de Monterrey, Campus Estado de México. Mexico City, México. August, 2017.
34. **Invited Talk:** "Drones Autónomos". Seminario de la Red de Aprendizaje, Investigación y Desarrollo de Agentes Autónomos. Universidad Autónoma de México, Unidad Cuajimalpa. Ciudad de México. México. July, 2017.
35. **Invited Talk.** "Drones Inteligentes que Pueden Ver". Programa de Verano de Investigación Científica en INAOE. Instituto Nacional de Astrofísica Óptica y Electrónica. Puebla, Mexico. July, 2017.
36. **Invited Talk:** "Drones Autónomos en Ambientes sin GPS". Seminario del grupo de Robótica y Manufactura Avanzada del CINVESTAV, Unidad Saltillo. Saltillo, México. May, 2017.
37. **Invited Talk:** "Sobre Drones y Robots Aéreos". Ciclo de Conferencias en QUADRIVIA, ciencia hasta en el bar. Puebla, México. May, 2017.
38. **Invited Talk:** "Localización visual eficiente para vuelo autónomo en ambientes sin GPS". División Académica de Ingeniería. Instituto Tecnológico Autónomo de México. Ciudad de México. México. Marzo, 2017.
39. **Demonstration:** "QuetzalCuauhtli del Proyecto Robust Autonomous Flight of Unmanned Aerial Vehicles in GPS Denied Outdoor Areas (RAFAGA)**". Escuela de Invierno de Robótica. Federación Mexicana de Robótica**. Universidad Popular Autónoma del Estado de Puebla. Puebla, Mexico. Enero, 2017.
40. **Invited Talk**: "DRON QuetzalCuauhtli". 2nd Workshop on Mecatronics Engineering. Instituto Tecnológico Superior de Atlixco. Atlixco, Puebla. México. November, 2016.
41. **Keynote**: "Robótica Aérea: Drones Inteligentes". Feria Internacional de la Lectura Infantil y Juvenil (FILIJ) 2016. Ciudad de México. November, 2016.
42. **Invited Talk**. "Demostración de Drones". Un día en la Semana Mundial del Espacio. Facultad de Ingeniería. Benemérita Universidad Autónoma de Puebla. October, 2016.
43. **Plenary Talk**: "Robótica Aérea". XXIII Semana Nacional de Ciencia y Tecnología. CONACYT. Instituto Nacional de Astrofísica, Óptica y Electrónica. Puebla, Mexico. October, 2016.
44. **Invited Talk**: "Demostración de robótica aérea". Semana i. Instituto Nacional de Astrofísica Óptica y Electrónica y Tecnológico de Monterrey. Puebla, Mexico. September, 2016.
45. **Invited Talk**: "Drones, volando y evitando obstáculos de manera automática". Actividades del App Adventure 2016. Instituto Tecnológico Superior de Huichapan. Huichapan, México. April, 2016.
46. **Invited Talk**: "Proyecto RAFAGA". 4ta Feria de las Ciencias, Artes y Humanidades. Preparatoria Emiliano Zapata. Benemérita Universidad Autónoma de Puebla. Puebla, México. April, 2016.
47. **Invited Talk**: "Robots inteligentes que pueden ver". Departamento de Ciencias e Ingenierías. Universidad Iberoamericana. Puebla, México. April, 2016.
48. **Invited Talk**: "Demostración de robótica aérea". Feria de Divulgación Científica. Secretaría de Educación Pública. Puebla, México. April, 2016.
49. **Invited Talk:** "Robotica Aérea". For visitors from the Universidad Tecnológica de Morelos. Instituto Nacional de Astrofísica, Óptica y Electrónica. Puebla, Mexico. April, 2016.
50. **Plenary Talk**: "Construcción y uso de mapas 3D utilizando cámaras a bordo de drones". Baños de Ciencia con el Gran Telescopio Milimétrico Alfonso Serrano. Ciudad Serdan, Puebla. March, 2016.

51. **Invited Talk**: "Demostración de Drones Inteligentes". 22a Feria de las Matemáticas. Deportivo La Carolina. Atlixco, Puebla, Mexico. March, 2016.
52. **Invited Talk**: "Mapeando con Drones". 9A Feria Internacional de la Lectura. Puebla, Mexico. February, 2016.
53. **Invited Talk**: "Drones pequeños volando más allá de la línea de vista". Seminario de Ciencias. Instituto de Investigaciones en Ciencias Báscias y Aplicadas. Universidad Autónoma del Estado de Morelos. Morelos, México. February, 2016.
54. **Invited Talk**: "Drones Inteligentes que generan y usan mapas 3D". Casa del Puente, Cholula, Puebla. Mexico. January, 2016.
55. **Plenary Talk**: "Robots voladores". 22a Semana Nacional de Ciencia y Tecnología". Instituto Nacional de Astrofísica, Óptica y Electrónica. Puebla y Cananea, Mexico. October, 2015.
56. **Plenary Talk**: "Localización y Control de UAVs en ambientes sin GPS". Celebraciones del Aniversario de la Facultad de Ciencias de la Electrónica. Benemérita Universidad de Autónoma de Puebla. October, 2015.
57. **Invited Talk**: "Veraneando en el INAOE", semana de actividades para niños en INAOE. Instituto Nacional de Astrofísica, Óptica y Electrónica. Puebla, Mexico. July, 2015.
58. **Keynote**: "Localización y Vuelo Autónomo de Drones en Ambientes sin acceso a GPS". at Campus Party. Guadalajara, Mexico. July, 2015.
59. **Invited Talk**: "Demostración de Sabina, robot de servicio y drones". ExpoShow Auto y Avión y Drones 2015. Puebla, Mexico. June, 2015.
60. **Plenary Talk**: "Los robots que un día estarán entre nosotros". Robotix FAIRE. UNAM. Ciudad de México. June, 2015.
61. **Invited Talk**: "Líneas de Investigación y Posgrado de la Coordinación de Ciencias Computacionales" para estudiantes del Tecnológico de Huauchinango. Instituto Nacional de Astrofísica, Óptica y Electrónica. Puebla, Mexico. May, 2015.
62. **Invited Talk**: "Líneas de Investigación y Posgrado de la Coordinación de Ciencias Computacionales" para estudiantes del Tecnológico de Zamora. Instituto Nacional de Astrofísica, Óptica y Electrónica. Puebla, Mexico. May, 2015.
63. **Invited Talk**: "Líneas de Investigación y Posgrado de la Coordinación de Ciencias Computacionales" para estudiantes del Tecnológico de Tacámbaro. Instituto Nacional de Astrofísica, Óptica y Electrónica. Puebla, Mexico. April, 2015.
64. **Invited Talk:** "Aerial Robots". Open Week 2015. Instituto Nacional de Astrofísica, Óptica y Electrónica. Puebla, Mexico. April, 2015.
65. **Invited Talk**: "Fast 6D Relocalisation for Teach-and-Repeat Flight in Micro Aerial Vehicles". Seminario Departamental. Centro de Investigación en Matemáticas (CIMAT). Guanajuato, Mexico. November, 2014.
66. **Invited Talk:** "Demonstration of Visual SLAM system to HRH Principe Andrew, Duke of York". Bristol Robotics Laboratory. Bristol, UK. February, 2014.
67. **Invited Talk**: "Navegación Autónoma en Robots Aéreos y Terrestres". Coordinación de Ciencias Computacionales. Instituto Nacional de Astrofísica, Óptica y Electrónica. Puebla, Mexico. June, 2014.
68. **Participation in the Demonstration on Visual Mapping for Drones. National Physical Laboratory.** London, the UK. September, 2013.
69. **Invited Talk**: "Relocalización rápida 6D para plataformas aéreas". Seminario Departamental. Centro de Investigaciones en Computación del Instituto Politécnico Nacional. Mexico City, Mexico. September, 2013.
70. **Invited Talk**: "Localización y mapeo simultáneo utilizando visión monocular en tiempo real". Facultad de Ciencias Computacionales. Benemerita Universidad de Puebla. Puebla, Mexico. December, 2012.
71. **Workshop Assistant**: Hands-on Computer Science & Robot Programming Event. University of Bristol. 2007-2010.
72. **Participation** as scientific staff in the *18th International Olympiad in Informatics*, celebrated in Mexico, August 2006.
73. **Leader of the State Team from Puebla** that participated in Mexican Olympiad in Informatics, during the period 2000 – 2003.

Students & Staff

Current PhD Students
1. Leticia Oyuki Rojas Perez. Autonomous Drone Racing in Complex Environments. [September 2020 – September 2024].
2. Rene Parlange Chavarria. Reinforcement Learning for Autonomous Flight. [September 2020 – September 2024].
3. Sergio Arredondo Serrano. Long-Life Learning for Autonomous Robots. Supervisor: **Jose Martinez-Carranza**; Co-Supervisor: Enrique Sucar Succar. [January 2020 – December 2023].
4. Arturo Cocoma Ortega. Deep Learning-based Visual Localisation and Mapping. [September 2018 – August 2022].
5. Erik Ramos. Visual SLAM using Deep Learning for Drone Navigation with Data Association. Universidad Tecnológica de la Mixteca. Supervisor: Alberto Petrilli; Co-Supervisor: **Jose Martinez-Carranza**. [January 2018 – December 2021].

Current 2-Year Master in Research Students
1. Jose Nava Zavala. Depth Estimation in a Single Monocular Image. [to conclude: August, 2022].
2. Rafael López Campos. Depth Estimation in a Single Aerial Image. [to conclude: August, 2021].

Former Postdoctoral Students
1. Dr. Mariana E. Miranda Varela. Optimization, Evolutionary Computing. September 2018 – December 2019.
2. Dr. Raymundo Domínguez Colín. Computer Vision. September 2018 – April 2019.
3. Dr. Luis Pellegrin Zazueta. Depth Estimation in Aerial Single Depth Images. November 2017 – July 2018.
4. Dr. Gregorio Martinez Jiménez. 3D Reconstruction of Aerial Images using Open Source Software. June – August 2017.

Alumni Graduated from a PhD Program
1. Antonio Matus Vargas. *"Quadrotor Flight in Constrained Indoor Environments"*. Supervisor: Dr. Gustavo Rodriguez Gomez, **Co-Supervisor: Dr. José Martínez-Carranza.** Computer Science Department, Instituto Nacional de Astrofísica Óptica y Electrónica. November 20th, 2020.
2. Aarón Eleazar López Luna. *"Modelado y diseño de un control unificado de un manipulador aéreo tipo vtol para misiones en el exterior"*. Supervisor: Israel Cruz Vega, **Co-Supervisor: Dr. José Martínez-Carranza.** Computer Science Department, Instituto Nacional de Astrofísica Óptica y Electrónica.. November 20th, 2020.
3. J. J. Antonio Osuna Coutiño. *"High-Level Structure Extraction from a Single Image"*. **Supervisor: Dr. José Martinez-Carranza.** Computer Science Department, Instituto Nacional de Astrofísica Óptica y Electrónica. August 28th, 2020.

Alumni Graduated from a 2-Year Master in Research Program

1. Eng. Aldrich Alfredo Cabrera Ponce. *"Geo-localisation of aerial images captured with Drones"*. **Supervisor: Dr. José Martínez-Carranza.** Computer Science Department, Instituto Nacional de Astrofísica Óptica y Electrónica. February 25th, 2021.

2. Eng. Eduardo Salazar Hidalgo. *"Control MPC de un cuadricóptero para el seguimiento de trayectorias basado en odometría visual".* Supervisors: Josefina Castañeda Camacho, Cesar Martínez Torres. **Co-Supervisor: Dr. José Martínez-Carranza.** Faculty of Electronic Sciences, Benemérita Universidad Autónoma de Puebla. Master in Electronic Science, Automation Speciality. January 29th, 2021.

3. BSc. Manuel López García. *"Deep-Learning for Load Lifting with a Micro Air Vehicle"*. **Supervisor: Dr. José Martínez-Carranza.** Computer Science Department, Instituto Nacional de Astrofísica Óptica y Electrónica. November 13th, 2020.

4. Eng. Leticia Oyuki Rojas Perez. *"A CNN Pilot for Autonomous Drone Racing"*. **Supervisor: Dr. José Martinez-Carranza.** Computer Science Department, Instituto Nacional de Astrofísica Óptica y Electrónica. August 21th, 2020.

5. Eng. Oswualdo Alquisiris Quecha. *"Localización del robot NAO usando flujo óptico para la estimación de profundidad"*. **Supervisor: Dr. José Martinez-Carranza.** Computer Science Department, Instituto Nacional de Astrofísica Óptica y Electrónica. February 27th, 2020.

6. Eng. René Parlange Chavarria. *"Vision-based Autonomous Navitgation for Wind Turbine Inspection"*. **Supervisor: Dr. José Martinez-Carranza.** Computer Science Department, Instituto Nacional de Astrofísica Óptica y Electrónica. February 18th, 2019.

7. Eng. Luis González Guzmán. *"Descriptores de Línea para la Creación de Mosaicos de Imágenes Térmicas Aéreas"*. **Supervisor: Dr. José Martinez-Carranza.** Computer Science Department, Instituto Nacional de Astrofísica Óptica y Electrónica. December 13th, 2018.

8. Eng. Esteban Jaramillo Cabrera. *"Mejora del Reconocimiento de Objetos, Acciones y Efectos usando los Ofrecimientos Probabilísticos de los Objetos"*. Supervisor: Dr. Eduardo Morales Manzanares. **Co-Supervisor: Dr. José Martínez-Carranza.** Computer Science Department, Instituto Nacional de Astrofísica Óptica y Electrónica. November 28th, 2018.

9. Eng. Arturo Muños Silva. MSc in Science and Technology of the Space. *"Estabilidad de cuadritores con carga suspendida."*. Supervisor: Dr. Gustavo Rodriguez-Gomez. **Co-Supervisor: Dr. José Martínez-Carranza.** Science and Technology of Space Master Program, Instituto Nacional de Astrofísica Óptica y Electrónica. February 27th, 2018.

10. Eng. Dania Andrea Largo Jaimes. MSc in Electronic Science. "*Navegación autónoma en ambientes forestales"*. Supervisor: Dr. José de Jesús Rangel Magdaleno. **Co-Supervisor: Dr. José Martínez-Carranza.** Electronics Department, Instituto Nacional de Astrofísica Óptica y Electrónica. September 4th, 2017.

11. Eng. Beatriz Hernández Hernández. MSc in Electronic Science. "*Vuelo autónomo para mantener un objetivo en el campo de visión de un dron"*. Supervisor: Dr. Israel Cruz Vega. **Co-Supervisor: Dr. José Martínez-Carranza.** Electronics Department, Instituto Nacional de Astrofísica Óptica y Electrónica. September 1st, 2017

12. Eng. Claudia Cruz Martínez. MSc in Computer Science. *"Mejoramiento en tiempo real de mapas 3D poco densos mediante superpixels"*. **Supervisor: Dr. José Martínez-Carranza.** Computer Science Department, Instituto Nacional de Astrofísica Óptica y Electrónica. October 26th, 2016.

13. BSc. Roberto de Lima Hernández. MSc in Computer Science. "*Real-Time Extraction of High Level Structures Using a Semi-Calibrated Stereo System"*. **Supervisor: Dr. José Martínez-Carranza.** Co-Supervisor: Dra. Alicia Morales Reyes. Computer Science Department, Instituto Nacional de Astrofísica Óptica. October 31st, 2016.

14. Eng. Nils Loewen. Master in Manufacturing Systems. *Obstacle avoidance during the autonomous flight of a quadcopter in gps-denied environments*. Supervisor: Rick Leigh Swenson Durie. **Co-Supervisor: Dr. José Martínez-Carranza.** Instituto Tecnológico de Monterrey, campus Querétaro. March 4th, 2016.

Alumni Undergraduate Students

1. Daniel Steven Levkovits Scherer. "*Vuelo autónomo de un VANT para generar plan de vuelo mediante reconocimiento de objetos usando CNNs*". Ingeniería Electrónica. Universidad Simón Bolívar. **Co-Supervisor: Dr. José Martínez-Carranza.** June, 2019.
2. Edgar Jacob Sosa Ceron. "*Coloreo y mallado para mapeo 3D en tiempo real*. Licenciatura en Ingeniería en Ciencias de la Computación. Benemérita Universidad Autónoma de Puebla. **Co-Supervisor: Dr. José Martínez-Carranza.** May 2019.
3. Roberto Munguia Silva. Eng. in Mechatronics. *Depth Estimation from a Monocular Camera using Óptical Flow*. Instituto Tecnológico Superior de Atlixco. **Supervisor: Dr. José Martínez-Carranza.** August 22nd, 2018.
4. Leticia Oyuki Rojas Pérez. Eng. in Mechatronics. *Autonomous Navigation System for Micro Aerial Vehicles*. Instituto Tecnológico Superior de Atlixco. **Supervisor: Dr. José Martínez-Carranza.** June, 2018.
5. Aldrich Alfredo Cabrera Ponce. Eng. in Mechatronics. *Mosaico de Imágenes Aéreas basado en Código Libre*. Instituto Tecnológico Superior de Atlixco. **Supervisor: Dr. José Martínez-Carranza.** June, 2018.
6. María Lisset Abundis de la Mora. Eng. in Mechatronics. *Procesamiento de Imágenes Térmicas Aéreas para la Construcción y Análisis de Modelos Tridimensionales en Zonas Arquológicas*. Universidad de las Américas Puebla. Supervisor: Dr. Rubén Alejos Palomares. **Co-Supervisor: Dr. José Martínez-Carranza.** May, 2018.
7. Johan Pablo Loredo. Eng. in Mechatronics. *Sistema de mapeo tridimensional en línea basado en código abierto: Aplicación en regiones arqueológicas*. Universidad de las Américas Puebla. Supervisor: Dr. Cesar Martínez-Torres. **Co-Supervisor: Dr. José Martínez-Carranza.** May, 2018.

Former Collaborators and Students in Internships

1. **QuetzalCuauhtli Team Member.** Luis Valentin Coronado. August - October, 2016.
2. **Research Assistant.** Esteban Omar Garcia Rodriguez. September, 2015 - December, 2016.
3. **Research Assistant.** Francisco Marquez. September, 2015 - February, 2016.
4. **Internship.** Esteban Tlelo Coyotecatl. Universidad de las Américas Puebla. August - November, 2019.
5. **Internship.** Aldrich Alfredo Cabrera Ponce. Tecnológico Superior de Atlixco. January-July, 2016.
6. **Internship.** Roberto Munguia Silva. Tecnológico Superior de Atlixco. January-July, 2016.
7. **Internship**. Andres Aguilar Miguel. Universidad Politécnica de Chiapas. February-May, 2016.
8. **Social Service.** Favio Mejia Basañez Roberto. Universidad de las Américas Puebla. December, 2015-June, 2016.
9. **Social Service.** Alfonso Rojas Oaxaca. Universidad de las Américas Puebla. December, 2015-June, 2016.
10. **Social Service.** Isaias Carrera Ventura. Benemérita Universidad Autónoma de Puebla. June-December, 2016.
11. **Internship**. Carlos Eduardo Méndez Aguilar. Universidad Politécnica de Chiapas. Mayo-Agosto, 2015.

Internships Sponsored by the Mexican Academy of Science

1. Octavio Aguirre Rodríguez. XXX Verano de la Investigación Científica. July – August 2020.
2. José Adrián Beltrán. XXX Verano de la Investigación Científica. July – August 2020.
3. Erick Eduardo Hernández Guerrero. XXVIII Verano de la Investigación Científica. July – August 2018.
4. Carlos Michel Maldonado Holguín. XXVIII Verano de la Investigación Científica. July – August 2018.
5. Edgar Hernández Aguirre. XXVIII Verano de la Investigación Científica. July – August 2018.

Visiting Postgraduate Students

1. Liseth Viviana Campos. PhD Student from Ingeniería Telemática, Universidad del Cauca, Popayán, Colombia. June – August, 2019.
2. Juan Manuel Fortuna Cervantes. PhD Student from Instituto de Investigación en Comunicación Óptica. Universidad Autónoma de San Luís Potosí, México. February – July, 2019.
3. Jose Pablo Sánchez Rodríguez. PhD Student from Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM), Campus Estado de México, México. May – October, 2017.
4. Nils Lowen. Master Student from Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM), Campus Querétaro, México. June – December, 2015.

Lecturing

Lecturing Experience (INAOE)
1. **Introduction to Robotics** (45 hours), January – May, 2021.
2. **Design and Analysis of Algorithms** (45 hours), August – December, 2020.
3. **Artificial Intelligence** (45 hours), August – December, 2020.
4. **Introduction to Robotics** (45 hours), January – May, 2020.
5. **Introduction to Robotics** (45 hours), January – May, 2019.
6. **Design and Analysis of Algorithms** (45 hours), August – December, 2018.
7. **Introduction to Robotics** (45 hours), January – May, 2018.
8. **Research Seminar 2** (45 hours), May-July, 2017.
9. **Formal Languages and Automata** – Preparatory course (24 hours), May – July, 2017.
10. **Artificial Intelligence** (45 hours), August – December, 2016.
11. **Research Seminar 2** (45 hours), May-July, 2016.
12. **Introduction to Robotics** (45 hours), January – May, 2016.
13. **Design and Analysis of Algorithms** (45 hours), August – December, 2015.
14. **Probabilistic Graphical Models** (45 hours), May – July, 2015.
15. **Formal Languages and Automata** – Preparatory course (10 hours), July, 2015.
16. **Introduction to Robotics** (45 hours), January – May, 2015.

Other Lecturing Experience
1. **Tutorial** (4 hours)**:** "Introducción a Ambientes de Simulación y Herramientas de Software para Drones Autónomos". Escuela de Invierno de la Federación Mexicana de Robótica. Universidad Tecnológica del Sureste de Veracruz. México. January, 2021.
2. **Tutorial** (4 hours): "Aprendizaje Profundo para Percepción en Drones". 7th National School on Learning and Applied Computational Intelligence. Organised by the Mexican Research Network on Applied Computational Intelligence. Mexico, Septembre, 2020.
3. **Tutorial** (4 hours): "Técnicas avanzadas para drones inteligentes". National Meeting of Computing. Organised by the Universidad Autónoma de Coahuila and the Mexican Society in Computer Science. Coahuila. Mexico, August, 2020.
4. **Course** (20 hours): "Introducción para Pilotaje de Drones". Para elementos adscritos al Centro de Estudios de Investigación en Seguridad Pública y Política Criminal. **Secretaría de Seguridad Pública y Tránsito Municipal de Puebla.** Puebla, México. Octubre, 2019.
5. **Tutorial** (4 hours): "Visual Simultaneous Localisation and Mapping Techniques for Autonomous Unmanned Aerial Vehicles". **National Congress of Automatic Control (CNCA)**. Benemerita Universidad Autonoma de Puebla and the Mexican Association in Automatic Control. Puebla. Mexico, October, 2019.
6. **Tutorial** (4 hours): "Exhibición de drones y uso de software para simulación de drones". 6th National School on Learning and Applied Computational Intelligence. Organised by the Faculty of Computer Sciences of the Benemérita Universidad Autónoma de Puebla and the Mexican Research Network on Applied Computational Intelligence. Puebla. Mexico, September, 2019.
7. **Tutorial** (4 hours): "Uso de drones para el monitoreo, inspección y vigilancia de terreno". **11º Congreso Mexicano de Inteligencia Artificial** (COMIA) 2019. Organised by Sociedad Mexicana de Inteligencia Artificial (SMIA), CICESE-UT y la Universidad Autónoma de Nayarit. Tepic, Nayarit. Junio, 2019.

8. **Workshop** (6 hours)**:** "Técnicas avanzadas para el vuelo autónomo de drones". Escuela de Invierno de la Federación Mexicana de Robótica. Centro de Investigación en Computación del Instituto Politécnico Nacional. Ciudad de México. México. January, 2019.

9. **Course** (40 hours): **"**Navegación autónoma de Drones". **Programa de Capacitación de Profesores (PCP) y Cursos de Actualización en las Disciplinas (CADi)**. Formación Docente Profesional CEDDIE. Instituto Tecnológico y de Estudios Superiores de Monterrey. Atizapan, Estado de México, México. June 25th – 29th, 2018.

10. **Tutorial** (3 hours): "Técnicas Básicas para Drones Autónomos y la Regulación de Drones". 5th National School on Learning and Applied Computational Intelligence. Organised by the Instituto Tecnológico de Culiacán and the Mexican Research Network on Applied Computational Intelligence. Culiacan, Mexico, September, 2018.

11. **Tutorial** (8 hours)**:** "Programming Drones with the Gazebo Simulator". **28th International Conference on Electronics, Communications and Computers (CONIELECOMP)**, Universidad de las Américas. Puebla, México. February, 2018.

12. **Workshop** (8 hours, 2 groups)**:** "Drones con ORB-SLAM y Gazebo". Escuela de Invierno de la Federación Mexicana de Robótica. Casino Xalapeño. Xalapa, Veracruz. México. February, 2018.

13. **Workshop** (8 hours): "Drones Autónomos Utilizando el Ambiente de Simulación Gazebo". 4th National School on Learning and Applied Computational Intelligence. Organised by the Universidad de Tlaxcala and the Mexican Research Network on Applied Computational Intelligence. Organised by the Centro Universitario de los Lagos and the Mexican Research Network on Applied Computational Intelligence. Lagos de Moreno, Mexico, September, 2017.

14. **Workshop** (6 horas). "Vuelo Autónomo en Ambientes sin GPS". **Taller en la Escuela de Invierno de Robótica. Federación Mexicana de Robótica.** Universidad Popular Autónoma del Estado de Puebla. Puebla, México. Enero, 2017.

15. **Tutorial** (6 horas)**.** "Volando un dron mediante un programa de computadora". 3rd National School on Learning and Applied Computational Intelligence. Organised by the Universidad de Tlaxcala and the Mexican Research Network on Applied Computational Intelligence. Organised by the Universidad Michoacana de San Nicolás de Hidalgo and the Mexican Research Network on Applied Computational Intelligence. Michoacan, Mexico. September, 2016.

16. **Tutorial** (8 hours). "Control de drones utilizando el sistema Vicon". **8 Congreso Mexicano de Inteligencia Artificial (COMIA)**. Puebla, México. May, 2016.

17. **Workshop** (8 hours). "Programación de Drones". 2nd National School on Learning and Applied Computational Intelligence. Organised by the Universidad de Tlaxcala and the Mexican Research Network on Applied Computational Intelligence. Tlaxcala, Mexico. October, 2015.

18. **Workshop** (8 hours): "Reconocimiento Visual de Objetos y Lugares Utilizando Unos Cuantos Bits". Taller en el **2do Congreso Internacional Tecnologías de la información y Comunicación**. Universidad Politécnica de Tlaxcala. Tlaxcala, México. September, 2013.

Review Activities

Reviewer in PhD Vivas

1. **Reviewer in PhD Viva**: "Procedural generation of river deltas using L-Systems and C-GANS". Student: Luis Oswaldo Valencia Rosado. Supervisor: Oleg Starostenko Basarab. Universidad de Las Américas Puebla (UDLAP). March 24th, 2021.
2. **Reviewer in PhD Viva**: "Human Activities Recognition based on Second Order Motion Descriptors and a Two-Stream Architecture" Student: Renier Oves García. Supervisor: Enrique Sucar Succar. Instituto Nacional de Astrofísica Óptica y Electrónica. February 19th, 2021.
3. **Reviewer in PhD Viva**: "Clasificación de señales EEG basada en representaciones bidimensionales y redes neuronales convolucionales." Student: Jonás Grande Barreto. Supervisor: María del Pilar Gómez Gil. Instituto Nacional de Astrofísica Óptica y Electrónica. December 11th, 2020.
4. **External Reviewer in PhD Viva**: "Visual Navigation and Optimal Control for Autonomous Drone Racing". Student: Shuo Li. Supervisor: Guido de Croon. **Delft University of Technology**. November, 12th, 2020.
5. **Reviewer in PhD Viva**: "Deep Representation Learning with Genetic Programming". Student: Lino Alberto Rodriguez Cuayahuitl. Supervisor: Hugo Jair Escalante Balderas. Instituto Nacional de Astrofísica Óptica y Electrónica. July 13th, 2020.
6. **Reviewer in PhD Viva**: "Detección y Localización de Manipulaciones de Ataques Espacio Temporales en Video Usando un Enfoque de Propósito General". Student: Ernesto Aparicio Díaz. Supervisor: René Cumplido Lindsey StirlingParra. Instituto Nacional de Astrofísica Óptica y Electrónica. February 27th, 2020.
7. **Reviewer in PhD Viva**: "A high capacity and robust image-based watermarking technique for relational data." Student: Maikel Lazaro Perez. Supervisor: Claudia Feregrino Uribe. Instituto Nacional de Astrofísica Óptica y Electrónica. February 24th, 2020.
8. **Reviewer in PhD Viva**: "Learning Causal Probabilistic Graphical Models and their application to the analysis of Effective Connectivity from functional Near InfraRed Spectroscopy". Student: Samuel Antonio Montero Hernández. Supervisor: Felipe Orihuela-Espina. Instituto Nacional de Astrofísica Óptica y Electrónica. January 30th, 2019.
9. **External in PhD Viva**: "Navegación autónoma de un dron hexacóptero con visión estereoscópica para mapeo y evasión de obstáculos en tiempo real." Estudiante: José Pablo Sánchez Rodríguez. Supervisor: Dr. Alejandro Aceves López. Escuela de Ingeniería y Ciencias. **Tecnológico de Monterrey**. Ciudad de México, México. November 26th, 2018.
10. **External Reviewer of the PhD Thesis Document**: "Scene Structure Recovery from Omnidirectional and Depth Cameras for Assistive Computer Vision". Student: Alejandro Perez-Yus. Supervisors: José Jesús Guerrero and Gonzalo Lopez-Nicolas. **University of Zaragoza**. April 25th, 2018.
11. **Reviewer in PhD Viva**: "Complex action recognition from human motion tracking using wearable". Student: Javier Herrera Vega. Supervisor: Felipe Orihuela-Espina. Instituto Nacional de Astrofísica Óptica y Electrónica. April 19th, 2018.
12. **Reviewer in PhD Viva**: "Complex action recognition from human motion tracking using wearable". Student: Irving Hussein López Nava. Supervisor: Angélica Muñoz Meléndez. Instituto Nacional de Astrofísica Óptica y Electrónica. March 20th, 2018.
13. **Reviewer in PhD Viva**: "Navegación basada en memoria visual para robots humanoides". Student: Luis Pellegrin. Supervisors: Hugo Jair Escalante Balderas. Instituto Nacional de Astrofísica Óptica y Electrónica. October 23th, 2017.
14. **Reviewer in PhD Viva**: "Navegación basada en memoria visual para robots humanoides". Student: Octavio Loyola González. Supervisors: José Francisco Martinez Trinidad y Milton García Borroto. Instituto Nacional de Astrofísica Óptica y Electrónica. October 17th, 2017.

15. **External** **Reviewer in PhD Viva**: "Navegación basada en memoria visual para robots humanoides". Student: Josefata Esau Delfin Marquez. Supervisor: Gustavo Arechavaleta. Center for Research and Advanced Studies of the National Polytechnic Institute (**CINVESTAV**) Saltillo Unit. May 26th, 2017.

16. **External** **Reviewer in PhD Viva**: "Automated real-time reconstruction of 3-D scenes using Conditional Markov random fields". Student: Sergio Alejandro Mota Gutierrez. Supervisor: Rogelio Hasimoto Beltrán, Jean-Bernard Hayet and Salvador Ruiz-Correa. Center for Research in Mathematics (**CIMAT**). April, 2015.

17. **Member of the Panel for the PhD Viva**: "Pedestrian classification from digital images: evaluation of unconventional learners and a new descriptor". Student: Carlos Serra Toro. Supervisor: Vicente Javier Traver Roig. Dep. de Llenguatges i Sistemes Informàtics. USinodal en Tesis Doctoral: "Incorporando Conocimiento Causal en Aprendizaje por Refuerzo". Estudiante: Ivan Raymundo Feliciano Avelino. Supervisores: Eduardo Morales Manzanares y Enrique Sucar Succar. Instituto Nacional de Astrofísica Óptica y Electrónica. February 17th, 2020.niversitat Jaume I. July, 2014.

Reviewer in Master in Research Vivas

1. **Reviewer in MSc Viva**: "Incorporando Conocimiento Causal en Aprendizaje por Refuerzo". Ivan Raymundo Feliciano Avelino. Supervisors: Eduardo Morales Manzanares, Enrique Sucar Succar. Instituto Nacional de Astrofísica Óptica y Electrónica. February 17th, 2020.

2. **Reviewer in MSc Viva**: "Clasificación de señales EEG basada en representaciones bidimensionales y redes neuronales convolucionales." Edgar Moisés Hernández González. Supervisor: María del Pilar Gómez Gil. Instituto Nacional de Astrofísica Óptica y Electrónica. December 10th, 2020.

3. **Reviewer in MSc Viva:** "Algoritmo de agrupamiento auto-organizado basado en SOM creciente para biometría con EEG." Zurisaddai Sandoval Lara. Supervisor: María del Pilar Gómez Gil. Instituto Nacional de Astrofísica Óptica y Electrónica. December 3rd, 2020.

4. **Reviewer in MSc Viva:** "Sistemas dinámicos hipercaóticos sincronizados para cifrado de imágenes." Estudiante: Freddy Alejandro Chaurra Gutiérrez. Supervisors: Gustavo Rodríguez Gómez, Claudia Feregrino Uribe. Instituto Nacional de Astrofísica Óptica y Electrónica. August 24th,2020.

5. **Reviewer in MSc Viva.** "Jerarquización Automática de Procesos de Decisión de Markov Parcialmente Observables para la Planificación de Tareas en Robótica de Servicio". Sergio Arredondo Serrano. Supervisor: Enrique Sucar. Instituto Nacional de Astrofísica Óptica y Electrónica. Coordinación de Ciencias Computacionales. November 12th, 2019.

6. **Reviewer in MSc Viva.** "Hierarchical Classification with Bayesian Networks and Chained Classifiers". Jonathan Serrano Perez. Supervisor: Enrique Sucar. Instituto Nacional de Astrofísica Óptica y Electrónica. Coordinación de Ciencias Computacionales. November 6th, 2019.

7. **Reviewer in MSc Viva.** "Fusión de Información Multimodal para Detección de Engaño en Videos". Rodrigo Rill García. Supervisor: Hugo Jair Escalante Balderas, Luis Villaseñor Pineda y Verónica Reyes Meza. Instituto Nacional de Astrofísica Óptica y Electrónica. Coordinación de Ciencias Computacionales. September 4th, 2019.

8. **Reviewer in MSc Viva.** "Human Body Pose Tracking Based on Spatio-Temporal Joints Dependency Learning". Rodrigo Barrita Zebadúa. Supervisor: Luis Enrique Sucar Succar. Instituto Nacional de Astrofísica Óptica y Electrónica. Coordinación de Ciencias Computacionales. January 11th, 2019.

9. **Reviewer in MSc Viva.** "Learning Robotic Manipulation Tasks using Relational Reinforcement Learning and Human Demonstrations". Arquímedes Méndez Molina. Supervisor: Eduardo Morales Manzanares. Instituto Nacional de Astrofísica Óptica y Electrónica. Coordinación de Ciencias Computacionales. November 13th, 2018.

10. **External** **Reviewer in MSc Viva.** "Localización Visual en robots de recursos computacionales limitados". Matías Mattamala. Supervisor: Javier Ruiz del Solar San Martín. Facultad de Ciencias Físico Matemáticas. **Universidad de Chile**. Santiago, Chile. August 14th, 2018.

11. **Reviewer in MSc Viva.** "Reconstrucción de Imágenes Foto Acústicas de Metales Originadas en un Medio Multicapas". Irving Caballero. Supervisor: Leopoldo Altamirano Robles. Instituto Nacional de Astrofísica Óptica y Electrónica. Coordinación de Ciencias Computacionales. February 28th, 2018.

12. **Reviewer in MSc Viva.** "Control de Movimiento y Planificación de un Robot Esférico". Martin Luna Cordova. Supervisor: Gustavo Rodríguez Gómez; Angélica Muñoz Meléndez. Instituto Nacional de Astrofísica Óptica y Electrónica. Coordinación de Ciencias Computacionales. February 27th, 2018.
13. **Reviewer in MSc Viva.** "Image authentication scheme and its hardware architecture using watermarking and visual cryptography". Ángel Hernández Joaquín. Supervisor: René Cumplido Parra. Instituto Nacional de Astrofísica Óptica y Electrónica. Coordinación de Ciencias Computacionales. February 19th, 2018.
14. **External** **Reviewer in MSc Viva.** "Implementación de un Algoritmos de Localización y Mapeo Simultáneo en un Cuadrirotor". Victor Hugo Cruz Sánchez. Supervisor: Hugo Rodríguez Cortés. Centro de Investigación y Estudios Avanzados del Instituto Nacional del Instituto Politécnico Nacional (**CINVESTAV**). February 26th, 2017.
15. **Reviewer in MSc Viva.** "Reconocimiento de Comportamiento de Peatones". Ariel Esau Ortiz Esquivel. Supervisor: Leopoldo Altamirano Robles. Instituto Nacional de Astrofísica Óptica y Electrónica. Coordinación de Ciencias Computacionales. January 20th, 2017.
16. **Reviewer in MSc Viva.** "Modelo Flexible de Movimiento de Torso, Brazo, Antebrazo y Muñeca". Victor Lobatos Ríos. Supervisor: Angélica Muñoz Meléndez. Instituto Nacional de Astrofísica Óptica y Electrónica. Coordinación de Ciencias Computacionales. November 29th, 2016.
17. **Reviewer in MSc Viva.** "Azcatl: A Bio-inspired data foraging mechanism based on indirect communication in mobile sensor networks for dynamic environments". Josué Castañeda Cisneros. Asesor: Saúl Eduardo Pomares Hernández. Instituto Nacional de Astrofísica Óptica y Electrónica. Coordinación de Ciencias Computacionales. November 22nd, 2016.

Participation in Government and Other Advisory Panels

1. Reviewer of **1 grant project proposal** for the Call: Convocatoria 2020 del Acuerdo México-Francia SEP-CONACYT-NAUIES-ECOS Nord Francia. February 22nd, 2021.
2. Member of committee for the evaluation of **1 academic program**: "Evaluación de Réplicas de la Convocatoria de Renovación 2020 del Programa Nacional de Posgrado de Calidad, CONACYT". February 16th, 2021.
3. Reviewer of **1 academic program** for the Mexican National Council of Science and Technology of Mexico: PNPC (Programa Nacional de Posgrados de Calidad) National Program for High-Level Quality Postgraduate Programs 2021.
4. Reviewer of 1 grant proposal for the Asociación Nacional de Universidades e Instituciones de Educación Superior (ANUIES). Call 2020 of the Mexican-French Agreement SEP-CONACYT-ANUIES-ECOS Nord Francia.
5. Reviewer of **1 project** for the Council of Science and Technology of the Puebla State: National Fair of Science and Engineering 2018.
6. Reviewer of **1 grant proposal** for the Mexican National Council of Science and Technology of Mexico: National Problems 2017 Grant Call.
7. Reviewer of **2 Programs** for the Mexican National Council of Science and Technology of Mexico: PNPC (Programa Nacional de Posgrados de Calidad) National Program for High-Level Quality Postgraduate Programs 2017.
8. Reviewer of **4 grant proposals** for the Mexican National Council of Science and Technology of Mexico: PEI (Programas de Estímulo a la Innovación) Program for Support to Innovation 2017 Grant Call.
9. Reviewer of **2 grant proposals** for the Mexican National Council of Science and Technology of Mexico: Basic Science 2017 Grant Call.
10. Reviewer of **2 grant proposals** for the Mexican National Council of Science and Technology of Mexico: National Problems 2016 Grant Call.
11. Reviewer of **3 projects** for the Council of Science and Technology of the Puebla State: National Fair of Science and Engineering 2017.

Participation as Reviewer in International Conferences and Journals

Since 2012 to date, I have been a regular reviewer for international conferences (ICRA, IROS, BMVC, RED-UAS, ICUAS, IMAV, NeurIPS, MICAI, CoDIT, MCPR, ETFA, IBERAMIA) and international journals (IEEE Robotics and Automation Letters, IEEE Transactions on Robotics, Robotics and Autonomous Systems, Autonomous Robots, Intelligent and Robotic Systems, Adaptive Behavior, IEEE Transactions on Industrial Electronics, IET Computer Vision, IET Image Processing, Pattern Recognition Letters, Pattern Recognition, Machine Vision and Applications, Multimedia Tools and Applications, Aerospace Engineering, Transactions on Parallel and Distributed Systems, Circuits, Systems and Computers, Real-Time Image Processing, Image and Vision Computing, Open Automation and Control Systems, Computers, Sensors, Robotica, Applied Sciences, IEEE Access, NeuroComputing, Engineering Applications of Artificial Intelligence).

Recently, I began using Publons to register some of my reviews (whenever possible). See my profile here: https://publons.com/researcher/3104802/jose-martinez-carranza/

Editorial Activities

1. **Guest Editor. Komputer Sapiens Magazine**. Mexican Society of Artificial Intelligence (SMIA in spanish). Special Issues on Aerial Autonomous Robotics. Year 10, Volume III, September-December, 2018; and Year 11, Volume I, January-April, 2019.

Event Organiser

Organiser in International Scientific Events

1. **General Chair: International Micro Air Vehicle Conference and Competition (IMAV) 2021.** Puebla, México. June/July, 2021.
2. **Track Chair: Mexican International Conference on Artificial Intelligence.** Xalapa, Mexico. October, 2019.
3. **Track Chair: Mexican International Conference on Artificial Intelligence.** Guadalajara. Mexico. October, 2018.
4. **Track Chair: Mexican International Conference on Artificial Intelligence.** Ensenada, Mexico. November, 2017.
5. **Chair: International Workshop on Vision and Control for Autonomous Drones.** Puebla, Mexico. February, 2017.
6. **Poster Chair: International Symposium on Mixed and Augmented Reality** (ISMAR). Merida, Mexico. September, 2016.
7. **Chair: Taller ICT for a Brighter Future** – Present Solutions to Pressing Problems: Case LAC-EU. Puebla, Mexico. October, 2015.
8. **Chair: British Machine Vision Student Workshop.** Bristol, UK. September, 2013.

Others

Memberships to Scientific Organisations
1. Royal Society-Newton Advanced Fellowship in the UK, (2015-2018).
2. Member of the National System of Researchers in Mexico, Level C (2017-2019), Level 1 (2020-2022).
3. IEEE Member.
4. Regular Member of the Mexican Computing Academy.
5. 5th Vocal Member of the Board of Directors of the Mexican Robotics Federation.
6. Member of the Research Network on Applied Computational Intelligence in Mexico.

Other Activities
1. Representative of the Computer Science Department before the Academic Staff College and a member of the Internal Technical Advisory Board of the Instituto Nacional de Astrofísica Óptica y Electrónica. October 2017 to date.
2. Representative of the Computer Science Department before the Science Communication Committee of the Instituto Nacional de Astrofísica Óptica y Electrónica. October 2017 to date.
3. Participation in the IROS2018 Autonomous Drone Racing competition. IEEE International Conference on Robotic Systems. Madrid, Spain. October, 2018.
4. Participation as a Team Member of the INAOE Team in the Autonomous Mini racing. Instituto Politecnico Nacional. Mexico City, Mexico. April, 2017.
5. Participation in the IMAV 2017, Indoors Competition. Toulouse, France. September, 2019. INAOE's team, QuetzalC++, ranked 4th in the competition.