

Miguel Carrasco

Associate Professor at UAI

Member of the Advanced Human Capital Formation committee in
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- Education**
- 2012 **POSTDOCTORAL RESEARCHER**,
Institut de la vision, Fondation Voir & Entendre,
UNIVERSITÉ PIERRE ET MARIE CURIE - UMPC - PARIS VI, FRANCE
 - 2010 **DOCTEUR EN INFORMATIQUE**, *mention très honorable*
Institut des Systèmes Intelligents et de Robotique - ISIR
UNIVERSITÉ PIERRE ET MARIE CURIE - UMPC - PARIS VI, FRANCE
ADVISORS: D. Mery (Pontificia Universidad Católica de Chile, Chile),
X. Clady, (Université Pierre et Marie Curie, France)
R. Benosman (University of Pittsburgh, USA)
 - 2010 **DOCTOR IN COMPUTER SCIENCE**
Department of Computer Science
PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE
 - 2008 **MASTER OF ENGINEERING**
Department of Computer Science
PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE
 - 2004 **MASTER IN INFORMATION TECHNOLOGY**, *Highest Honors*
Department of Information Engineering
UNIVERSIDAD DE SANTIAGO DE CHILE
 - 2004 **ENGINEERING IN INFORMATION TECHNOLOGY**, *1st class.*
 - 2002 **BACHELOR IN ENGINEERING SCIENCES**
Department of Information Engineering
UNIVERSIDAD DE SANTIAGO DE CHILE
- Academic responsibilities**
- 2020 Director of Infrastructure, Faculty of Engineering and Sciences. Universidad Adolfo Ibáñez (up-to-date)
 - 2018 Head of the Information Engineering Department. Faculty of Engineering and Sciences. Universidad Adolfo Ibáñez (2018-2020)
 - 2018 General Coordinator of the Information Engineer Accreditation report at UAI presented to the National Accreditation Commission (CNA-Chile, 2017~2018)
 - 2014 Academic Director of Master of Science in Engineering in Information Technology. Faculty of Engineering and Sciences. Universidad Adolfo Ibáñez (2014~2018)
 - 2014 General Editor of the Industrial Engineer Accreditation report at UAI presented to the National Accreditation Commission (CNA-Chile, 2014~2015)
 - 2012 Founder of the Computer Vision Laboratory. Escuela de Informática y Telecomunicaciones, Faculty of Engineering. Universidad Diego Portales.
 - 2012 Elected member of the Faculty of Engineering Council. Universidad Diego Portales (From March to October, 2012).
 - 2011 Elected representative of the Faculty of Engineering to participate of the Innovative Teaching for Deeper Learning, organized by LASPAU at Harvard University, Cambridge (Teacher leadership award). USA. April.

Educational experience

INTERNSHIPS

- 2012 Postdoctoral researcher, Institut de la vision, Fondation Voir & Entendre, Université Pierre et Marie Curie (Dec'12 - Jan'13), Paris, France.
- 2008 Doctoral student, Institut des Systèmes Intelligents et de Robotique (ISIR), Université Pierre et Marie Curie (Sorbonne Université), Paris. (Jan-Dec).
- 2008 Student Researcher, Commissariat à l'Energie Atomique (CEA), Centre de Fontenay-aux-Roses, Paris (May).
- 04-07 Doctoral student, Department of Computer Science (DCC), Pontificia Universidad Católica de Chile (PUC), Chile

LECTURER GRADUATES >> MASTER AND DOCTORAL

- Image Processing with Python MSc Data Science, UAI. 1/ 2020
- Introduction to Python MSc Data Science. UAI. 1/2019, 1/2020
- Data Analysis (co-lecture) PhD. DISC. FIC. UAI. 1/2014, 1/2015, 1/2016
- Image Pattern Recognition EIT. UDP. 2/ 2011
- Image Processing with Matlab EIT. UDP. 1/ 2011, 2/2012
- Computer Vision EIT. UDP. 1/ 2010, 2012

LECTURER UNDERGRADUATES

- Robotics Simulation (Webots) FIC. UAI. 1/2020 (online)
- Data Mining FIC. UAI. 2/2019
- Internet-of-Things UP (Mexico S/18, S/19) | FIC. UAI. 18, 19
- Introduction to Python FIC. UAI. 1/2018, 1/2019
- Human-Computer Interaction FIC. UAI. 2013 to 2017
- Introduction to Robotics FIC. UAI. 2014 to 2019
- CS50-Harvard (C, PHP, SQL) FIC. UAI. 2016, 2017
- Arduino Programming (H&S) FIC. UAI. 2015
- Image Processing FIC. UAI. 2/2014
- Design Nature (Olin College) FIC. UAI. 1/2014
- Web programming FIC. UAI. 1/2013
- e-Business FIC. UAI. 1/2013
- C- Programming EIT. UDP. 2009, 2010, 2011, 2012

Professional activities

EMPLOYMENT

- 2019 Associate Professor, Universidad Adolfo Ibañez (UAI)
- 2014 Academic Director of Master of Science in Information Technology (UAI)
- 2014 Assistant Professor, Universidad Adolfo Ibañez (UAI)
- 2013 Lecturer, Universidad Adolfo Ibañez (UAI)
- 2010 Assistant Professor, Universidad Diego Portales (UDP)
- 2009 Lecturer, Universidad Diego Portales (UDP)
- 2005 Teaching assistance, Pontificia Universidad Católica de Chile (PUC)
- 2001 Teaching assistance, Universidad de Santiago de Chile (USACH)

ACADEMIC PROFESSOR | LECTURER

- Academic, Information Engineering (since 2013)
- Academic, Master in Data Science (since 2019)
- Academic, Master in Artificial Intelligence (since 2020)
- Lecturer, Ph.D. Complex Systems (since 2014)
- Lecturer, Internet-of-Things Diploma (since 2020)
- Lecturer, Artificial Intelligence Diploma (since 2019)
- Lecturer, TIC management Diploma (since 2017)

JOURNALS REVIEWING

- 2020 Progress in Artificial Intelligence (PAI), Springer.
- 2020 Sensors, MDPI.
- 2020 Scientia Iranica, Sharif University of Technology.
- 2019 Computers in Human Behavior, Elsevier.
- 2019 Sensors, MDPI.
- 2019 Inderscience Publishers
- 2018 Computers in Human Behavior, Elsevier.
- 2018 Expert Systems with Applications, Elsevier.
- 2016 IEEE Sensors Journal, IEEE.
- 2014 Image Processing, IET.
- 2014 International Journal of Computer Integrated Manufacturing, T&F eds.
- 2014 Ingeniare. Revista Chilena de Ingeniería.
- 2014 Machine Vision and Applications MVA. Springer Eds.
- 2013 International Journal of Computational Bioscience - IASTED.
- 2013 Research in Nondestructive Evaluation - ANST.
- 2013 Sensors, MDPI.
- 2012 Research in Nondestructive Evaluation - ANST.
- 2012 Indian Journal of Engineering and Material Sciences - IEMSEW.
- 2011 NDT & E International. Elsevier.
- 2011 Ibero-American Journal of Computing, Computación y Sistemas.
- 2007 Transactions on Automation Science and Engineering, IEEE.

NATIONAL & INTERNATIONAL PROJECT REVIEWER

- 2020 [Reviewer Board Member](#) of Sensors, MDPI.
- 2020 [Reviewer Board Member](#) of Journal of Imaging, MDPI.
- 2020 Project reviewer. Universidad Panamericana- CDMX. Mexico.
- 2019 Research project reviewer. FONDEF Idea (Conicyt).
- 2018 Research project reviewer. Universidad Panamericana- AGS. Mexico.
- 2015 Reviewer. Programa de Atracción e Inserción de Capital Humano Avanzado (PAI). National Commission of Science and Technology (Conicyt), Chile, Up-to-date
- 2012 [Member of the Advanced Human Capital Formation committee in Computer and Information Technology Area](#). CONICYT (up-to-date), Chile
- 2012 Research project reviewer. Initiation into research competition. FONDECYT. Chile

AREA CHAIR PROGRAM COMMITTEES

- 2016 Chair on Latin America Symposium on Computer Graphics, Virtual Reality, and Image Processing (SLCGRVPI), CLEI.
- 2013 Pacific-Rim Symposium on Image and Video Technology (PSIVT). Area chair on track Computer Vision Applications.
- 2011 Pacific-Rim Symposium on Image and Video Technology (PSIVT). Area-chair on track Computer Vision Applications.
- 2007 Pacific-Rim Symposium on Image and Video Technology (PSIVT) Editor Assistance, December 17-19, Santiago, Chile.

PROGRAM COMMITTEE MEMBER | REVIEWER - TECHNICAL COMMITTEE

- 2020 IEEE International Conference on Computational Intelligence in Bioinformatics and Computational Biology (Santiago, Chile).
- 2020 International Conference on Pattern Recognition (ICPR, Milan, Italy).
- 2020 IEEE Andean Conference (Ecuador)
- 2018 International Conference on Mechanical, Electric and Industrial Engineering (MEIE).
- 2018 International Conference on Pattern Recognition (ICPR, Beijing, China).
- 2016 21st IberoAmerican Congress on Pattern Recognition (CIARP).

- 2015 II Workshop on Information Technologies and Systems, RedSTI.
- 2014 Association for the Advancement of Artificial Intelligence, AAAI.
- 2014 VI Chilean Conference on Pattern Recognition (CCPR 2014).
- 2013 Pacific-Rim Conference on Multimedia (PCM).
- 2013 PSIVT Workshop on Quality Assessment on Control by Image and Video Analysis.
- 2012 Pacific-Rim Conference on Multimedia (PCM).
- 2010 IEEE International Symposium on Geoscience and Remote Sensing.
- 2010 Pacific-Rim Symposium on Image and Video Technology (PSIVT).
- 2009 IEEE International Symposium on Geoscience and Remote Sensing.
- 2009 Pacific-Rim Symposium on Image and Video Technology (PSIVT).
- 2007 IEEE International Symposium on Geoscience and Remote Sensing.
- 2007 Pacific-Rim Symposium on Image and Video Technology (PSIVT).

VISITING PROFESSOR

- 2020 Coding Dojo Silicon Valley, campus San José, California, USA. February 29th to March 7th. UAI-TI short-term visitors.
- 2019 Facultad de Ingeniería, Universidad Panamericana (UP), Campus Bonaterra, Mexico. Jun, 15th-28th. VP of Research, Dr. Ramiro Velazquez.
- 2018 Facultad de Ingeniería, Universidad Panamericana (UP), Campus Bonaterra, Mexico. Jun, 26th-July 7th. VP of Research, Dr. Ramiro Velazquez.
- 2015 Institut de Biologie Structurale (IBS), UMR 5075, Grenoble, France. December 11th to 18th, FERMI Project. Dr. Leandro Estrozi.
- 2015 Pontificia Universidad Católica del Perú, Informatics Engineering Department, Pattern Recognition and Artificial Intelligence Research Group, Lima, Perú. September 16th to September 21th, FERMI Project. Prof. Dr. Cesar Beltrán.
- 2014 Institut de Biologie Structurale (IBS), UMR 5075, Grenoble, France. November 23th to 28th, FERMI Project. Dr. Leandro Estrozi.
- 2014 Pontificia Universidad Católica del Perú, Informatics Engineering Department, Lima, Perú. October 6th to October 10th, FERMI Project. Prof. Dr. Cesar Beltrán.
- 2014 University of São Paulo, Physics Institut, Scientific Computing Group. São Carlos, Brazil, April 1st to April 6th, 2014. FERMI Project. Prof. Dr. Odemir Martinez.

Fellowships and Scholarships

- 2012 Postdoctoral Fellowship granted by the French Government, (Campus France and Institut Français Chile).
- 2009 Residence DIPEI Fellowship. Pontificia Universidad Católica de Chile. 1st and 2nd semester.
- 2007 Collège Doctoral Franco-Chilean Scholarship to finish the Doctoral Thesis on jointly supervised PhD at University Pierre et Marie Curie - Paris VI granted by CONICYT and the Council of Chilean University Rectors.
- 2007 DIPEI Postgraduate Direction Fellowship granted by Pontificia Universidad Católica de Chile for cursing International studies. Nov.
- 2005 Microsoft Study Scholarship +MAS. Program, 5 stars NET. April.
- 2005 1st and 2nd semester Registration Scholarship. Pontificia Universidad Católica de Chile.
- 2005 National Graduate Student Scholarship for Doctoral Studies in Chile granted by the Chilean National Commission of Science and Technology - CONICYT.
- 2004 DIPUC Assistant Fellowship. Pontificia Universidad Católica de Chile. 2nd semester, August.
- 2002 Master Scholarship in Information Technology for academic excellence granted by the Department of Information Engineering - DIINF. USACH

Academic honors, and Awards

- 2014 Winner of the Intel Galileo University Donation program (Sept).
- 2012 [Best Faculty Teacher Award](#) of the Faculty of Engineering, Universidad Diego Portales, UDP.
- 2012 [Best Teacher Award](#) of the Escuela de Informática y Telecomunicaciones, Faculty of Engineering, Universidad Diego Portales, UDP.
- 2011 [Best Teacher Award](#) of the Escuela de Informática y Telecomunicaciones, Faculty of Engineering, Universidad Diego Portales, UDP.
- 2010 [Teacher Leadership Award](#) of the Faculty of Engineering at Universidad Diego Portales, UDP.
- 2010 [Doctoral dissertation received the highest honors](#) (mention *très Honorable*) from University Pierre et Marie Curie, UPMC - Paris VI (France).
- 2007 [Best Paper Award](#) on Computer Vision and Application in Pacific-Rim Symposium on Image and Video Technology – PSIVT. Dec.
- 2004 [Master thesis received the highest honors](#) from Universidad de Santiago de Chile, USACH.
- 2004 [First place in Engineering in Information Technology](#). Universidad de Santiago de Chile, USACH (among 98 students).

Professional Projects

- 2020 IoLink: “Herramienta de segmentación de microscopia de peces y órganos internos. Role: Architect solution engineer (80k USD).
- 2017 Walmart-LIDER. “Monitoreo remoto basado en IoT”: Achievements: Desarrollo de sistema de monitoreo en máquinas de congelado, medición de temperatura, humedad y puertas, y Sistema de monitoreo en sala de servidor: Medición de corriente, temperatura, humedad”, Role: Architect solution engineer /developer (15k USD).
- 2017 Innova Chile (Voucher). “Desarrollo del prototipo de un sistema inteligente de reconocimiento de imágenes para la optimización del proceso de molienda SAG de mineral a través del uso racional de medios de molienda”, Role: Architect solution engineer /developer. Company: EM-Elecmetal. Developers: IO-link. Grant no. 16ITE1-70889 (120k USD).
- 2015 InnovaChile (Voucher). “Mejora Significativa del proceso de producción de repuestos mineros, mediante la incorporación de un sistema en línea de control para su fabricación”. Role: TI engineer designer / developer. Achievements: Desarrollo de una plataforma en línea para el monitoreo de la producción. (\$14k USD)
- 2015 InnovaChile (Voucher). “Desarrollo de equipo de medición, registro y alerta de desgaste de escobillas de grafico en monitores de corriente continua para equipos mineros de alta criticidad operativa”. Role: Engineer developer. (\$12K USD).

Thesis Supervision

PHD STUDENT

1. 2019. Sebastian Muñoz, Co-Director: Miguel Carrasco, Karol Suchan, Doctorado en Sistemas Complejos, Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibañez (UAI).

ALUMNI. MASTER DEGREE

1. 2015. (MGET). J. Meneses: “Gestión y Monitoreo de EPP para la construcción”, Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibañez.
2. 2014. (MGET) C. Larenas: “Monitoreo Animal en tiempo real a través de sensores”, Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibañez.
3. 2014. (M. Eng.) E. Cáceres: “Interacción entre personas con discapacidad motriz y aplicaciones para el desarrollo de habilidades cognitivas mediante dispositivo de seguimiento ocular”, Escuela de Informática y Telecomunicaciones. Universidad Diego Portales (UDP).
4. 2013. (MGET). J. Gonzalez: “Guía de Televisión Remota para GTD Imagen”, Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibañez.

5. 2019. A. Aylwin, A. Fuentes, A. Rebolledo: “Sistema de monitoreo para flujos en la producción de harina”, Capstone project, Ingeniería Civil Industrial, mención TI. Universidad Adolfo Ibañez.
6. 2019. A. Zamorano: “Modelo predictivo de rutas de navegación de usuarios en el sitio WEB usando cadenas de Markov”, Capstone project, Ingeniería Civil Industrial, mención TI. Universidad Adolfo Ibañez.
7. 2019. F. Atala, J.L. Vallejos: “Desarrollo de Sistema de Monitoreo para Biodigestor Doméstico”, Ingeniería Civil Industrial – mención BioIngeniería, Ingeniería Civil Informática, Universidad Adolfo Ibañez.
8. 2018. J. Acuña, J. Aranguiz, D. Marín: “Sistema de control para pernos de fricción”, Ingeniería Civil en Minería / Industrial. Capstone Project. Centro de Minería UAI. Co-guía. Prof. Cristián Cáceres. Universidad Adolfo Ibañez.
9. 2018. J. Fernandez, B. Jackson, S. Undurraga: “Automatización del control de calidad a través de visión artificial”, Ingeniería Civil Industrial – mención TI. Capstone project en empresa JPrint. Universidad Adolfo Ibañez.
10. 2017. G. Duarte, B. Sade: “Perfiles de túneles mineros”. Ingeniería Civil en Minería, Co-guía: Prof. Cristian Cáceres. Universidad Adolfo Ibañez.
11. 2017. N. Bravo, A. Tapia: “Automatización de medición de alcalinidad para un biodigestor doméstico”, Ingeniería Civil en Bioingeniería, Ingeniería Civil Industrial mención TI. Universidad Adolfo Ibañez.
12. 2015. C. Ojeda, G. Ferrari: "Bundi: controla tu entorno". Ingeniería Civil Industrial, mención TI. Universidad Adolfo Ibañez.
13. 2015. M. Cabezon: "Verni: Sistema de Control y Automatización para invernaderos", Ingeniería Civil Industrial, mención TI. Universidad Adolfo Ibañez.
14. 2012. A. García: "Interacción humano-computador por medio de detección y proyección de movimiento", Ingeniería Civil Informática. Universidad Diego Portales.
15. 2012. R. Schalchli: "Sistema de recomendación de productos de supermercados a través de una interfaz móvil mediante reconocimiento de patrones", Ingeniería Civil Informática. Universidad Diego Portales..
16. 2012. M. Ortega and A. Viada: "Sistema de detección de gestos de forma activa", Universidad Diego Portales.
17. 2012. V. Pozo: "Sistema de reconocimiento de objetos utilizando detección de patrones", Ingeniería Civil Informática. Universidad Diego Portales.
18. 2011. F. del Campo: "Caracterización de la intención humana en movimientos de aprehensión utilizando un sistema de adquisición de imágenes y un acelerómetro", Ingeniería Civil Informática. Universidad Diego Portales.

JURY COMMITTEE

1. 2019 (Ph.D.) Pablo Henriquez, “New developments for randomized neural networks”, Doctor of Complex Systems Engineering of [Universidad Adolfo Ibañez \(UAI\)](#), Facultad de Ingeniería y Ciencias, Thesis Director: Prof. Gonzalo Ruz.
2. 2018. (Candidate Ph.D). Eduardo Villegas Jaramillo, “Metodología heterogénea para la inspección visual automática basada en técnicas de aprendizaje inexactamente supervisado”, [Universidad Nacional de Colombia \(UNAL\)](#), Facultad de Ingeniería y Arquitectura, Departamento de Ingeniería Industrial, Thesis Director: Dr. Ing. Mauricio Orozco Alzate.
3. 2017. (Ph.D). Carlos Mera Banguero, “Detección de defectos en sistemas de Inspección Visual Automática a través del Aprendizaje de Múltiples Instancias”, [Universidad Nacional de Colombia \(UNAL\)](#), Facultad de Minas, Departamento de Ciencias de la Computación y Decisión, Thesis Director: Prof. John W. Branch.

4. 2016. (Ph.D.) Orlando Erazo, "A Predictive Model for User Performance Time with Natural User Interfaces based on Touchless Hand Gestures". [Universidad de Chile](#). Thesis Director: José A. Pino
5. 2015. (M.Sc.) Juan Reyes, "3D Scene Reconstruction". [Universidad Técnica Federico Santa María \(UTFSM\)](#). Thesis Director: Luis Salinas.
6. 2014. (Ph.D.) Miguel Solís, "Aprendizaje reforzado inverso en sistemas de control con estados no observables". [Universidad Técnica Federico Santa María \(UTFSM\)](#). Thesis Director: Héctor Allende.
7. 2014. (M.Sc.) Tomás Mardones. "Combinación de representaciones compactas de imágenes para el problema de recuperación de imágenes", [Universidad Técnica Federico Santa María \(UTFSM\)](#). Thesis Director: Héctor Allende.
8. 2014 (M. Eng) Felipe Fuentes, "Evaluación de algoritmos para corrección ortogonal de imágenes, obtenidas mediante UAV usadas para generar mosaicos y modelos 3D", [Universidad de Santiago de Chile \(USACH\)](#). Thesis Director: Fernando Contreras.
9. 2013. (Ph.D.) Tomás Mardones, "Combinación de representaciones compactas de imágenes para el problema de recuperación de imágenes", [Universidad Técnica Federico Santa María \(UTFSM\)](#). Thesis Director: Héctor Allende.
10. 2013. (Ph.D.) Irene Zuccar. "Reconocimiento automático de objetos 3D usando un número reducido de imágenes de rayos X", [Pontificia Universidad Católica de Chile \(PUC\)](#). Thesis Director: Domingo Mery (Thesis Proposal).
11. 2012. (M.Sc.) Germán Mondragon, "Metodología para el diseño de un clasificador múltiples vistas sobre radiografías RX: Aplicación para la búsqueda de gatillos de armas pequeñas dentro de equipajes", [Pontificia Universidad Católica de Chile \(PUC\)](#). Thesis Director: Domingo Mery.

JOURNALS IN PREPARATION OR SUBMITTED

1. M. Carrasco, P. Toledo, R. Velázquez, O. Bruno: "Automatic stomatal segmentation based on Delaunay-Rayleigh frequency distance", in **resubmission (2nd Round), Plants**.

JOURNALS: WOS, SCOPUS

1. R. Velázquez, E. Pissaloux, D. Del-Valle-Soto, M. Carrasco, A. Mendoza-Andrade, J. Varona-Salazar: "Movilidad para invidentes utilizando el GPS del teléfono inteligente y un dispositivo táctil vestibule", *DYNA Ingeniería e Industria* (**2021**) (in press)
2. J. Varona, R. De Fazio, R. Velázquez, N. I. Giannoccaro, M. Carrasco, P. Visconti: "MEMS-based Micro-scale Wind Turbines as Energy Harvesters of the Convective Airflows in Microelectronic Circuits", *International Journal of Renewable Energy Research*, 10(3):1213-1225 (**2020**) (**SCOPUS**)
3. P. Wolff, S. Rios; D. Clavijo.; M. Graña; M. Carrasco: "Methodologically grounded semantic analysis of large volume of Chilean medical literature data applied to the analysis of medical research funding efficiency in Chile", *Journal of Biomedical Semantics (BioMed Central, BMC)*, 11:12 (**2020**), <https://doi.org/10.1186/s13326-020-00226-w>
4. R. Moffat, P. Parra, M. Carrasco: "Monitoring a 28.5 m High Anchored Pile Wall in Gravel Using Various Methods", *Sensors*, 20:80, (**2019**), doi.org/10.3390/s20010080
5. M. Carrasco, P. Toledo, N.D.: "Macromolecule Particle Picking and Segmentation of a KLH Database by Unsupervised Cryo-EM Image Processing", *Biomolecules*, 9:12, (**2019**), doi.org/10.3390/biom9120809
6. M. Carrasco, F. Álvarez, R. Velázquez, J. Concha, F. Pérez-Cotapos: "Brush-Holder Integrated Load Sensor Prototype for SAG Grinding Mill Motor", *Electronics*, 8:11, (**2019**), doi.org/10.3390/electronics8111227

7. G. Araya-Letelier, P. Maturana, M. Carrasco, F. Carlos-Antico, M.S. Gomez, “Mechanical-Damage Behavior of Mortars Reinforced with Recycled Polypropylene Fibers”, *Sustainability*, 11:2200, (2019): doi.org/10.3390/su11082200
 8. R. Velázquez, E. Pissaloux, P. Rodrigo, M. Carrasco, N. Giannoccaro and A. Lay-Ekuakille: “An Outdoor Navigation System for Blind Pedestrians Using GPS and Tactile-Foot Feedback”, *Applied Sciences*. 8: 578 (2018): doi.org/10.3390/app8040578
 9. E. Caceres, M. Carrasco, S. Ríos: “Evaluation of an eye-pointer interaction device: a solution for disabled people?” *Heliyon* (Cell Press), 4:3, March (2018). doi.org/10.1016/j.heliyon.2018.e00574
 10. M. Carrasco, F. Álvarez, R. Velázquez, J. Concha, I. Perez-Cotapos: “Inline Force Sensor Development for Electrical Motors for Mining Operations in Chile: A New Inspection Protocol”, *IEEE Latin American Transaction*, 16:1, 66-74., February (2018). doi.org/10.1109/TLA.2018.8291456
 11. G. Araya-Letelier, F.C. Antico, M. Carrasco, P. Rojas; C.M. García Herrera: “Effectiveness of new natural fibers on damage-mechanical performance of mortar”, *Construction and Building Materials* (Elsevier), 152:672-682, October (2017) doi.org/10.1016/j.conbuildmat.2017.07.072
 12. D. Mery, V. Riffo, U. Zcherpel, G. Mondragon, I. Lillo, I. Zuccar, H. Lobel, M. Carrasco: “GDxray: The Database of X-ray Images for Nondestructive Testing”, *Journal of Nondestructive Evaluation* (Springer), 34:42, (2015). doi.org/10.1007/s10921-015-0315-7
 13. M. Carrasco and X. Clady: “Exploiting eye-hand coordination to detect grasping movements”, *Image and Vision Computing* (Elsevier), vol. 30, 860-874, (2012). doi.org/10.1016/j.imavis.2012.07.001
 14. M. Carrasco and D. Mery: “Automatic Multiple View Inspection using Geometrical Tracking and Feature Analysis in Aluminum Wheels”, *Journal of Machine Vision and Applications* (Springer). vol. 22, pp:157-170. (2011). doi.org/10.1007/s00138-010-0255-2
 15. M. Carrasco, L. Pizarro, and D. Mery: “Visual Inspection of Glass Bottlenecks by Multiple-View Analysis”, *International Journal of Computer Integrated Manufacturing* (Taylor & Francis Online), vol.23 (1), pp.925. (2010). doi.org/10.1080/0951192X.2010.500676
 16. L. Robledo, M. Carrasco and D. Mery: “A Survey of Land Mine Detection Technology and Algorithms”, *International Journal of Remote Sensing* (Taylor & Francis Online), vol. 30(9), pp. 2399-2410, (2009). doi.org/10.1080/01431160802549435
 17. L. Pizarro, D. Mery, R. Delpiano, and M. Carrasco: “Robust Automated Multiple View Inspection”, *Journal of Pattern Analysis and Applications*, vol. 11(1), pp.22-32. (2008). doi.org/10.1007/s10044-007-0075-9
 18. D. Mery and M. Carrasco: “Advances on Automated Multiple View Inspection”, *Lecture Notes in Computer Science (LNCS)*, vol. 4319, pp. 513-522. (2006).
 19. M. Carrasco and D. Mery: “Automated Visual Inspection using trifocal analysis in an uncalibrated sequence of images”, *Materials Evaluation*, vol. 64(9), pp. 900-906. (2006).
 20. D. Mery and M. Carrasco: “Automated multiple view inspection based on uncalibrated image sequence”, *Lecture Notes in Computer Science (LNCS)*, vol. 3540, pp. 1238-1247, Jun. (2005).
 21. M. Carrasco and D. Mery: “Segmentation of welding discontinuities using a robust algorithm”, *Materials Evaluation*, vol. 62(11), pp. 1142-1147. (2004). (SCOPUS)
- OTHER INDEXED JOURNALS
-
22. G. Araya-Letelier, F.C. Antico, P.F. Parra, M. Carrasco: “Fiber-Reinforced Mortar Incorporating Pig Hair”, *Advanced Engineering Forum*, v.21, 219-225 (2017). (IET, EBSCO), doi.org/10.4028/www.scientific.net/AEF.21.219

23. F. del-Campo and M. Carrasco: "Identification of human movements of apprehension with hidden Markov model using and acceleration sensor", Journal of Communication and Computer, vol. 9.(6), pp.653-659. (2012) (EBSCO).

INTERNATIONAL CONFERENCES

24. G. Araya-Letelier; P. Maturana; M. Soledad Gomez; M. Carrasco; F. Antico; C. Burbano: "Desempeño fracto-mecánico de morteros reforzados con fibras plásticas recicladas", XIV Congreso Internacional de Patología y Recuperación de Estructuras, CINPAR 2019: Salta, Argentina, 2019.
25. G. Araya-Letelier; M. Carrasco; C. Burbano; S. Kunze, U. Reidel; M. Gutierrez: "Control de fisuración de mezclas de adobe reforzado con fibras sintéticas y naturales", XIV Congreso Internacional de Patología y Recuperación de Estructuras, CINPAR 2019: Salta, Argentina, 2019.
26. A. Beghelli; J. Briede; M. Carrasco; P. Prieto: "Generic generative design systems to imprint personalities in consumer products: Preliminary results", 21st International Conference on Engineering Design (ICED17), University of British Columbia, Vancouver, Canada, Aug. 21-25., 2017. (SCOPUS)
27. G. Araya-Letelier, F. C. Antico, P. Parra, M. Carrasco: "Fiber reinforced mortar, pig hair, industrial waste, flexural strength, compressive strength, impact strength", International Conference – Towards a Sustainable Urban Environment (EBUILT-2016), Cluj Napoca, Romania, Nov. 16-19., 2016.
28. A.Viada, M. Ortega, M. Carrasco: "Active System for Hand Motion Recognition", In Proceedings of the 38th Latin-American Conference on Informatics (CLEI), Medellín, Colombia, Oct. 1-5. (IEEE-CS), 2012. (SCOPUS)
29. M. Carrasco: "Multiple partial solutions for the point-to-point correspondence problem in three views", in Proceedings of the 8th IEEE International Conference on Intelligent Computer Communication and Processing (ICCP), Cluj-Napoca, Romania, Aug. 30-Sept.1 (IEEE-CS, pp155-158), 2012. (SCOPUS)
30. M. Carrasco, D. Mery: "Bifocal matching using multiple geometrical solutions", in Proceedings of the 5th Pacific-Rim Symposium on Image and Video Technology (PSIVT). Gwanju, Korea, Nov. 20-23, 2011.
31. F. del Campo and M. Carrasco: "Characterizing human grasping movements by means of an acceleration sensor", in Proceedings of Applied Computing Conference (ACC). Angers, France, Nov. 17-19, 2011.
32. M. Carrasco, X. Clady: "Prediction of user's grasping intentions based on the eye-hand coordination", In Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS). Taipei, Taiwan, Oct. 18-22, 2010. (SCOPUS)
33. M. Carrasco and X. Clady: "Utilisation de la coordination main-oeil pour la prediction d'un geste de prehension", In Proceedings of the 17ème conférence en Reconnaissance des Formes et Intelligence Artificielle (RFIA). Caen, France, Jan 19-22, 2010.
34. M. Carrasco and X. Clady: "Prediction of user's intention based on the hand motion recognition", in Proceedings of the XXVIII International Conference of the Chilean Computer Society (SCCC). Santiago, Chile, Nov. 9-14, 2009.
35. M. Carrasco, L. Pizarro and D. Mery: "Image Acquisition and Automated Inspection of Wine Bottlenecks by Tracking in Multiple Views", in Proceedings of 8th International Conference on Signal Processing, Computational Geometry and Artificial Vision (ISCGAV) pp. 82-89. Rhodes Island, Greece, Aug. 20-22, 2008.
36. M. Carrasco and D. Mery: "Automatic Multiple Visual Inspection on Non-Calibrated Image Sequence with Intermediate Classifier Block", in Proceedings of the 2nd Pacific-Rim Symposium on Image and Video Technology (PSIVT). Santiago, Chile, Dec 17-19, 2007. *Best Paper Award on Track Computer Vision and Applications.* doi.org/10.1007/978-3-540-77129-6_34 (SCOPUS)

37. M. Carrasco, L. Pizarro and D. Mery: "Bimodal Biometric Person Identification System under Perturbations", in Proceedings of the 2nd Pacific-Rim Symposium on Image and Video Technology (PSIVT). Santiago, Chile, Dec. 17-19, **2007. (SCOPUS)**
38. D. Mery and M. Carrasco: "Automated Multiple View Inspection of Metal Castings", IEEE/SPIE, 8th International Conference on Quality Control by Artificial Vision (QCAV). Le Creusot, France, May 23-25, **2007**.
39. D. Mery and M. Carrasco: "Advances on Automated Multiple View Inspection", in Proceedings of IEEE Pacific-Rim Symposium on Image and Video Technology (PSIVT). Hsinchu, Taiwan, Dec. 11-13, **2006**.
40. D. Mery and M. Carrasco, "Automated multiple view inspection based on uncalibrated image sequences", in 14th Proceedings of the Scandinavian Conference on Image Analysis (SCIA). Joensuu, Finland, Jun. 19-22, **2005**.

NATIONAL CONFERENCES –CHILEAN AND FRENCH MEETINGS–

41. A. Beghelli, C. Díaz, I. Cabrera, M. Carrasco, G. Huerta, S. Moreno, J. Villalón C. Astudillo, R. Cereceda, I. Ortuzar, N. Pérez, C. Pieringer, C. Tamayo, "Enseñanza de programación de computadores al servicio de la innovación", Actas de Encuentro Chileno de Computación (ECC), Santiago, Dic. **2015**.
42. A. García, M. Carrasco: "Interacción Humano-Computador en un escritorio virtual". en Actas del XXI Encuentro Chileno de Computación (ECC). Valparaíso Nov.12-16, **2012**.
43. M. Carrasco and X. Clady: "Predicción de la intención humana basado en la coordinación Mano-Ojo", in Primer Congreso de Estudiantes de Postgrado Ingeniería (CEPIUC), Pontificia Universidad Católica de Chile, Chile, May 29, **2009**.
44. M. Carrasco: "Automatic Multiple Visual Inspection on Non-calibrated Image Sequence with Intermediate Classifier Block", GDR ISIS/Club EEA, Métrologie 3D par vision, Lyon, France. March, 27, **2008**.
45. M. Carrasco, R. Portugal, and B. Peralta: "Reconocimiento Biométrico de Audio y Rostro: Un sistema viable de Identificación", in XVII Congreso Chileno de Control Automático ACCA, Universidad de la Frontera, Chile, Jan 10-12, **2007**.
46. R. Portugal and M. Carrasco: "Ensamble de Algoritmos Bayesianos con Árboles de decisión: una alternativa de clasificación", XVII Congreso Chileno de Control Automático ACCA, Universidad de la Frontera, Chile, Jan 10-12, **2007**.
47. M. Carrasco, A. Cansado, and A. Soto: "Detección de patrones de fallas utilizando técnicas de análisis no supervisado", XII Encuentro Chileno de Computación ECC. Universidad Austral de Chile, Chile, Nov. 7-11, **2005**.
48. M. Carrasco and D. Mery: "Inspección visual automática usando análisis trifocal en una secuencia de imágenes no calibradas", in XII Encuentro Chileno de Computación ECC. Universidad Austral de Chile, Chile, Nov. 7-11, **2005**.

DEGREE THESIS

49. M. Carrasco, "Non-Calibrated Multiple Views: Applications and Methodologies", Doctoral thesis in Computer Science (Informatique). Université Pierre et Marie Curie – UPMC (France) and Pontificia Universidad Católica de Chile. Jan 25, **(2010)**.
50. M. Carrasco, "Segmentation of welding defects using digital image processing techniques", Department of Information Engineering. Master of Engineering Sciences in Information Technology. Universidad de Santiago. May 27, **(2004)**.

BOOK CHAPTERS

51. M. Carrasco, D. Mery: "Robust Algorithm for Nondestructive Testing of Welds Seams", in Ultrasonic and Advanced Methods for Nondestructive Testing and Material Characterization, World Scientific Publishing 2007, pp. 635-658.

INTERNATIONAL PROJECTS

1. FERMI (Feature Extraction and Recognition Methods for Biological Images Understanding) (2014-2016). (Peru, Brazil, France and Chile). STIC-AmSud regional project. Project coordinator. This project aims at developing of new algorithms, techniques and tools to process biological digital images to detect and recognize patterns into the images. An important issue is that images can be acquired from different sources (micrography, electronic microscopy, digital images, microarrays, and others) and can represent various biological organisms and natural objects. With this project we will join the expertise of the research groups involved from the Pontifical Catholic University of Peru (Peru), University of Sao Paulo (Brazil), Pontifical Catholic University of Chile (Chile), Adolfo Ibañez University (Chile) and the Institut de Biologie Structurale at Grenoble (France).

FRENCH PROJECTS

2. BRAHMA. UPMC-ISIR, France. (2008-2009). Doctoral student researcher. Title: "Utilisation de la coordination oeil-main pour la prédiction d'un geste de préhension". This project aims to develop a novel approach to recognize the user's gesture based on the visual information captured from the user perspective. Generally, most motion recognition methods capture user's movements by tracking body parts. Instead, I developed a system that captures the scene using the user's gaze, and the grasp movement. My fellowship was funding by CONICYT – Colegio Doctoral Franco-Chileno under grant no. 21050185 and by the School of Engineering at Pontificia Universidad Católica de Chile.

CHILEAN PROJECTS (CORFO, FONDECYT, FONDEF)

3. CORFO (contratos tecnológicos) (2018-2020). Role: Technical Researcher/developer. Title: "Desarrollo de modelos predictivos usando machine learning para la toma de decisiones en la producción de arándanos bajo condiciones actuales y proyectadas de cambio climático". Project supported by HORTIFRUT-UAI. Grant: 17COTE83081.
4. UAI-2030 [CORFO]. (2018). Role: Co-director, researcher. Title: "Determinación de curva granulométrica de suelos a través de análisis óptico en profundidad". Project supported by UAI-Built.
5. FONDEF Idea-CONICT (2013-2015). Role: Technical Researcher. Title: "Desarrollo y evaluación de algoritmos de data mining para la predicción del riesgo de crisis en pacientes ambulatorios de un hospital pediátrico". Main director: Sebastian Ríos, University of Chile. Grant: CA13i-10300.
6. FONDECYT-CONICYT (Initiation into research competition) (2011-2014). Role: **Principal Director**. Title: "Characterization of reach-to-grasp movements based on active perception systems". This project proposes a novel approach to detect reach-to-grasp movements by means of computer vision techniques. My solution fuses two viewpoints, the first of which is obtained from an eye-tracker device capturing the user's head perspective and the second viewpoint is captured by a wearable camera attached to the user's wrist. Project supported by CONICYT under grant no. 11100098. (\$102.000 USD)
7. DCC-PUC, Chile. (2007-2008). Role: Student researcher (PhD). Title: "Multiple View Visual Inspection". This project aims to develop a machine to evaluate the quality of wine glass bottles. My research consists in generating a robust multiple view inspection scheme in a non-calibrated way. The main motivation is the development of new computer vision techniques that may be applied as quality control methods to different manufactured products. Project partially supported by CONICYT ACT-32 and the School of Engineering at Pontificia Universidad Católica de Chile.
8. DCC-PUC, Chile. (2005-2006). Role: Student researcher (PhD). Title: "Tracking of potential defects in metal castings". This project aims to develop an algorithm to classify potential defects from real defect using the epipolar geometry in multiples views. Project partially supported by CONICYT under grant no. 1040210.

9. DIINF-USACH, Chile. **(2003-2004)**. Role: Student reasearcher (M.Eng). Title: "Segmentation of welding defects". This project aims to develop an algorithm capable of segmenting welding defects using robust digital image processing techniques. Project partially supported by CONICYT under grant no. 1040210.

[INVITED SEMINARS, LECTURES, WORKSHOPS](#)

- 2018 Expositor, "II Feria de Robótica", Charla: Visión Humana como sistema de control, Instituto Nacional, Santiago, Chile. Nov 30.
- 2018 Invitado Panel Curricular, 7° Congreso TIC: "Arquitecturas tecnológicas habilitantes para el desarrollo económico del país", Universidad Diego Portales. Nov 21.
- 2018 Expositor, "1er Tribunal Ambiental", Proyectos Aplicados con Visión Artificial, Facultad de Ingeniería y Ciencias, UAI. Nov 13.
- 2018 Workshop, "Primer Congreso de Realidad Virtual, Mixta e Inmersiva en Santiago de Chile", Visión Humana como sistema de control, organized by VAIR Tech. Oct, 11.
- 2017 Workshop, "Genuino Day 2017", Human Computer Interaction, organized by Faculty of Engineering and Sciences, Universidad Adolfo Ibañez, Viña del Mar, March 31.
- 2016 Expositor, Ciclo de Charlas: Estadística Estratégica para la toma de decisiones, "Análisis en multiples vistas. Aplicaciones y Metodologías". Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibañez, Sep 29.
- 2016 Workshop, "Genuino Day 2016", Human Computer Interaction, organized by Faculty of Engineering and Sciences, Universidad Adolfo Ibañez, April 4.
- 2016 Expositor, 2nd Active Learning in Engineering Education Workshop, organized by Faculty of Engineering and Sciences, Universidad Adolfo Ibañez, Jan 14-15.
- 2015 Expositor, Semana de la Docencia, organized by the Centro de Innovación y Aprendizaje, Universidad Adolfo Ibañez, Oct. 30.
- 2013 AlDyNet, Workshop on Algorithms and Randomness, organized by the Faculty of Engineering and Sciences, (UAI) in colaboración with INRIA Sophia-Antipolis (France), Universidad Adolfo Ibañez, Chile, Nov., 21.
- 2012 Workshop, Introduction to Image Processing, organized by the student branch of IEEE-UDP, Faculty of Engineering, Universidad Diego Portales, (total time 7.2Hrs) Oct, 9-30.
- 2012 Lecturer, Computer Vision Seminar, Department of Computer Science, School of Engineering, Pontificia Universidad Católica de Chile. Oct., 04.
- 2012 Lecturer, Programa de Postítulo en Informática y Gestión (INGES), Pontificia Universidad Católica de Chile. Jun, 28, 2012.
- 2009 Lecturer, Semana de Ingeniería, Universidad Diego Portales, Chile. Oct, 6.
- 2009 Expositor, First Postgraduate Engineering Student (CEPIUC), Pontificia Universidad Católica de Chile, Chile. May, 29.
- 2006 Expositor, First Academic-Entrepreneurial Meeting on Computer Vision in Nondestructive Tests (VCEND). Pontificia Universidad Católica de Chile, Sept. 13.

Other studies~
training

[WORKSHOPS AND TRAINING](#)

- 2020 Coding Dojo, Silicon Valley, San José, California, USA. February.
- 2011 Innovative Teaching for Deeper Learning, **Harvard University**, organized by **LASPAU**. Cambridge. USA. April.
- 2007 Student training assistantships. Centro de Desarrollo Docente de la Vicerrectoría Académica. Pontificia Universidad Católica de Chile. May.
- 2006 Industrial Robotics Workshop. Parallax, RAMBAL. Chile (10 hrs).
- 2005 dotNET. Microsoft 5 Star program at the Pontificia Universidad Católica de Chile. April to July.
- 2005 Training in Scientific and Technical Writing. Prof. Jean-Luc Dumont -JL Consulting. Pontificia Universidad Católica de Chile. January.

ELEMENTARY AND HIGH SCHOOL EDUCATION

- 1994 Colegio San Ignacio A.O. (Santiago, Chile)
Elementary and High School Diplomas (1983-1994)
- 1994 Award for Excellence in Ignatian Spirit. Colegio San Ignacio (High School).
- 1993 Award for Excellence in Ignatian Spirit. Colegio San Ignacio (High School).

LANGUAGES

- Spanish Native language.
- English Advanced Intermediate Level.
- French Advanced Intermediate Level.

Interests

PHOTOGRAPHY EXPOSITOR

- 2008 Digital photography selected to be published in the fifth edition of Schmap Budapest Guide. www.schmap.com, Nov.
- 2006 Digital photography expositor at Centro Cultural España, Sep.
- 2006 Expositor at FotoBlogs'06. First digital photography meeting in Chile. Printed exposition. Biblioteca de Santiago, Aug-Sept.
- 2004 Expositor at the first photography festival in Chile. "Foto al Aire Libre", Parque Forestal. Santiago. FotoAmérica '04. Nov.

Memberships

- IEEE member (since 2005)
- Member of the SCCC (Sociedad Chilena de Ciencia de la Computación).