

# Miguel Carrasco

Associate Professor at UDP

International Engineering Educator ING.PAED.IGIP

Member of the Advanced Human Capital Formation committee in

Computer and Information Technology, ANID

UNIVERSIDAD DIEGO PORTALES

FACULTY OF ENGINEERING AND SCIENCES

School of Information and Telecommunications

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 <https://www.researchgate.net/profile/Miguel-Carrasco-16>

 [https://scholar.google.es/citations?user=WYz\\_08AAAAAJ&hl=es](https://scholar.google.es/citations?user=WYz_08AAAAAJ&hl=es)

## Education

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| 2023 | INTERNATIONAL ENGINEERING EDUCATOR, ING.PAED.IGIP (IGIP, AUSTRIA)<br>Innova HiEd Academy   |
| 2012 | POSTDOCTORAL RESEARCHER,<br>Institut de la vision, Fondation Voir & Entendre,<br>UNIVERSITÉ PIERRE ET MARIE CURIE – UMPC – PARIS VI, FRANCE  |
| 2010 | DOCTEUR EN INFORMATIQUE, mention très honorable (Summa cum Laude)<br>Institut des Systèmes Intelligents et de Robotique - ISIR<br>UNIVERSITÉ PIERRE ET MARIE CURIE – UMPC – PARIS VI, FRANCE<br>ADVISORS: Domingo Mery (Pontificia Universidad Católica de Chile, Chile),<br>Xavier Clady, (Université Pierre et Marie Curie, France)<br>Ryad Benosman (University of Pittsburgh, USA) |
| 2010 | DOCTOR IN COMPUTER SCIENCE<br>Department of Computer Science<br>PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE   |
| 2008 | MASTER OF ENGINEERING<br>Department of Computer Science<br>PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE  |
| 2004 | MASTER IN INFORMATION TECHNOLOGY, Highest Honors<br>Department of Information Engineering<br>UNIVERSIDAD DE SANTIAGO DE CHILE  |
| 2004 | ENGINEERING IN INFORMATION TECHNOLOGY, top of the class.   |
| 2002 | BACHELOR IN ENGINEERING SCIENCES<br>Department of Information Engineering<br>UNIVERSIDAD DE SANTIAGO DE CHILE  |

## Academic responsibilities

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| 2024 | Education Program Director, Faculty of Engineering and Science. Universidad Adolfo Ibáñez (Since Ago. 2024, March, 2025)   |
| 2023 | Co-director of Doctorate in Data Science, Faculty of Engineering and Science. Universidad Adolfo Ibáñez (Jan, 2023~Ago,2024)   |
| 2020 | Director of Infrastructure, Faculty of Engineering and Science. Universidad Adolfo Ibáñez (Jan, 2020~Jan, 2021)  |
| 2018 | Head of the Information Engineering Department. Faculty of Engineering and Science. 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 Science. Universidad Adolfo Ibáñez (2014~2018)   |
| 2012 | Founder of the Computer Vision Laboratory. Escuela de Informática y Telecomunicaciones, Faculty of Engineering. Universidad Diego Portales.  |
| 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. |

## 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 UAI. 2020-2024, UDP. 2025
- Image Pattern Recognition MSc Data Science, UAI. 1/2022-2024
- Introduction to Python Master of Data Science. UAI. 2019-2024
- Data Analysis (co-lecture) PhD. DISC. FIC. UAI. 1/2014-2016, 2023
- Image Pattern Recognition EIT. UDP. 2/ 2011.
- Image Processing with Matlab EIT. UDP. 1/ 2011, 2/2012
- Computer Vision EIT. UDP. 1/ 2010, 2/2012, MAI, UAI. 2/2022

## LECTURER UNDERGRADUATES

- TIC's Projects I EIT. UDP. 2025
- Data Mining FIC. UAI. 2/2019, 1/2024
- Data Science fundamentals FIC. UAI. 1/2021 (online)
- Robotics Simulation (Webots) FIC. UAI. 1/2020 (online)
- Internet-of-Things UP<sup>i</sup> (Mexico S/18, S/19, S/21) | 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
- Image Processing with Matlab FIC. UAI. 2/2014
- Design Nature (Olin College) FIC. UAI. 1/2014
- e-Business FIC. UAI. 1/2013
- C- Programming EIT. UDP. 2009, 2010, 2011, 2012

## EMPLOYMENT

- 2025 Associate Professor, Universidad Diego Portales (UDP)
- 2019 Associate Professor, Universidad Adolfo Ibáñez (UAI)
- 2014 Academic Director of Master of Science in Information Technology (UAI)
- 2014 Assistant Professor, Universidad Adolfo Ibáñez (UAI)
- 2013 Lecturer, Universidad Adolfo Ibáñez (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

- Faculty, PhD. in Data Science (2023-2024) ([Academic council member](#))
- Faculty, Master in Data Science (2019-2024) ([Academic council member](#))
- Faculty, Master in Artificial Intelligence (2020-2024) ([Academic council member](#))
- Faculty, Master in Science in Data Science (2022-2024) ([Academic council member](#))
- Lecturer, Artificial Intelligence Diploma (2019-2022)
- Lecturer, TIC management Diploma (since 2017-2022)
- Lecturer, Ph.D. Complex Systems (2014-2023)
- Faculty, Information Engineering (since 2013-2025)

## JOURNALS REVIEWING

<b>Journal</b>	<b>Editorial</b>	<b>Period</b>
Journal of Imaging	MDPI	2025, 2022
Access	IEEE	2025
Data-Centric Engineering	Cambridge University Press	2025
Progress in Artificial Intelligence (PAI)	Springer	2023, 2022 (×2), 2021, 2020
Sensors	MDPI	2021, 2020, 2019, 2013
Computers in Human Behavior	Elsevier	2023, 2019, 2018
International Journal of Computer Integrated Manufacturing	T&F	2022, 2021, 2014
Computers	IEEE	2024, 2023
International Journal of Human-Computer Interaction (IJHCI)	T&F	2024, 2022
Entropy	MDPI	2022, 2021
Visual Studies	Taylor & Francis	2022, 2021
Research in Nondestructive Evaluation	ANST	2013, 2012
Metrology	MDPI	2023
Information	MPDI	2023
The Visual Computer	Springer	2023
Algorithms	MDPI	2023
Electronics	MDPI	2023
Applied Sciences	MDPI	2022
Internet of Things Magazine	IEEE	2022
Sensors (IEEE)	IEEE	2022
Mathematics	MDPI	2022
Transactions on Artificial Intelligence	IEEE	2022
Acta IMEKO	International Measurement Confederation.	2021
Measurements: sensors	Elsevier	2020
Scientia Iranica	Sharif University of Technology	2020
(sin nombre especificado)	Inderscience Publishers	2019
Expert Systems with Applications	Elsevier	2018
Sensors Journal	IEEE	2016
Image Processing	IET	2014
Ingeniare. Revista Chilena de Ingeniería	Universidad de Tarapacá	2014
Machine Vision and Applications MVA	Springer	2014
International Journal of Computational Bioscience	IASTED	2013
Indian Journal of Engineering and Material Sciences	IEMSEW	2012
NDT & E International	Elsevier	2011

<sup>1</sup> UP: Universidad Panamerica, Campus Aguas Calientes, Mexico.

#### ACADEMIC AND PROFESSIONAL COMMITTEES

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- 2025 [National Accreditation Commission](#) (CNA). Chile. Evaluator of postgraduate program. Universidad Católica de la Santísima Concepción, Universidad del Bío Bío, Universidad de Concepción, Universidad Técnica Federico Santa María. Doctorado en Inteligencia Artificial.
- 2024 [ANID. Expert advisory committee](#) (ANID, Agencia Nacional de Investigación y Desarrollo), Chile. Evaluation of the Technical Guide for the Innovation Challenge of the State Defense Council.
- 2024 [ANID. Panel evaluator committee](#) (ANID, Agencia Nacional de Investigación y Desarrollo), Chile. Concurso Desafíos Públicos. Superintendencia de Seguridad Social – SUSESO.
- 2024 [National Accreditation Commission](#) (CNA). Chile. Evaluator of postgraduate program. Universidad Técnica Federico Santa María. Magíster en Ciencias de la Informática.
- 2023 [ANID. Panel evaluator committee](#) (ANID, Agencia Nacional de Investigación y Desarrollo), Chile. Concurso Desafíos Públicos. Superintendencia de Seguridad Social – SUSESO.
- 2023 [National Accreditation Commission](#) (CNA). Chile. Evaluator of postgraduate program. Universidad Católica del Maule, Doctorado en Ingeniería.
- 2023 [FONDEF Panel evaluator committee](#) (ANID, Agencia Nacional de Investigación y Desarrollo), Chile
- 2022 [National Accreditation Commission](#) (CNA). Chile. Evaluator of postgraduate program. Pontificia Universidad Católica de Valparaíso, Magíster en Informática.
- 2020 Reviewer Board Member of Sensors, MDPI.
- 2020 Reviewer Board Member of Journal of Imaging, MDPI.
- 2015 Programa de Atracción e Inserción de Capital Humano Avanzado (PAI). [National Commission of Science and Technology](#) (ANID), Chile, (up to date)
- 2012 [Member of the Advanced Human Capital Formation committee](#) in Computer and Information Technology Area. ANID (up to date), Chile

#### NATIONAL AND INTERNATIONAL PROJECT REVIEWER

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- 2023 Project reviewer. Universidad Panamericana- CDMX. Mexico.
- 2023 Research project reviewer. FONDEF Idea (Anid).
- 2021 Research project reviewer. Initiation into research competition. FONDECYT. Chile
- 2021 Project reviewer. Universidad Panamericana- CDMX. Mexico.
- 2020 Project reviewer. Universidad Panamericana- CDMX. Mexico.
- 2019 Research project reviewer. FONDEF Idea (Anid).
- 2018 Research project reviewer. Universidad Panamericana- AGS. Mexico.
- 2012 Research project reviewer. Initiation into research competition. FONDECYT. Chile

#### AREA CHAIR PROGRAM COMMITTEES

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- 2020 Technical Co-chair. IEEE International Conference on Computational Intelligence in Bioinformatics and Computational Biology (Santiago, Chile).
- 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.

- 2022 ICT for Health, Accessibility and Wellbeing (IC-IHAW 2021, Lárnaca, Cyprus)
- 2022 International Conference on Pattern Recognition (ICPR, Montréal Québec).
- 2021 1<sup>st</sup> International Conference on ICT for Health, Accessibility and Wellbeing.
- 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 21<sup>st</sup> 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

- 2024 Facultad de Ciencias de la Educación y Psicología, Cordoba, Spain. January 7 th to February 9th, Project: RRReMaker. Research and Innovation Staff Exchange (RISE). H2020-MSCA-RISE-2020, Project coordinator. Prof. César Gonzalez-Martín.
- 2022 Facultad de Bellas Artes, Granada, Spain. January 25th to February 27th, Project: RRReMaker. Research and Innovation Staff Exchange (RISE). H2020-MSCA-RISE-2020, Project leader: Prof. Ana García Lopez.
- 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, 26<sup>th</sup>-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, Peru. 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, Peru. 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

- 2025 [Best Teacher Award](#) of diploma on Data Science, Faculty of Engineering and Science. Universidad Adolfo Ibáñez (cohort 2024).
- 2024 [Best Teacher Award](#) of the Master in Data Science, Faculty of Engineering and Science. Universidad Adolfo Ibáñez.
- 2023 [Outstanding Academic Performance](#) of the Faculty of Engineering and Science. Universidad Adolfo Ibáñez.
- 2023 [Best Teacher Award](#) of the Master in Artificial Intelligence (cohort 2021/1), Faculty of Engineering and Science. Universidad Adolfo Ibáñez.
- 2023 [Acknowledgment](#) for contributions to the Faculty of Engineering and Science in the role of Director of Infrastructure (2020-2021). Universidad Adolfo Ibáñez.
- 2021 [Best Teacher Award](#) of the Master in Data Science (cohort 2019), Faculty of Engineering and Science. Universidad Adolfo Ibáñez.
- 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

- 2024 WilaTech: “Sistema de monitero de desgaste de escobilla de grafito”. Role: Architect solution engineer/developer.
- 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 grafito en monitores de corriente continua para equipos mineros de alta criticidad operativa”. Role: Engineer developer. (\$12K USD).

#### PHD CURRENT STUDENTS

1. 2024. Jorge León: “Condicionando Imagen-a-Imagen con Audio”, Director: Miguel Carrasco, Doctorado en Data Science, Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez (UAI).
2. 2024. Luis Oliveros: “Analizar el comportamiento del mecanismo de atención de los Visual Transformers y evaluar su rendimiento en relación a la atención visual humana.”, Director: Miguel Carrasco, Doctorado en Data Science, Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez (UAI).

#### ALUMNI PHD

1. 2023. Sebastián Muñoz: “Fitness Landscape Analysis of Multi-Attribute Vehicle Routing Problems”, Director: Karol Suchan (UDP), Co-Director: Miguel Carrasco (UAI), Doctorado en Sistemas Complejos, Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez (UAI).

#### ALUMNI. MASTER DEGREE

1. 2025. Bruno Perry: “Evaluación comparativa de algoritmos de reconocimiento de actividad sospechosa”, Master of Science in Data Science (MSDS), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.
2. 2025. Sebastián Novoa: “Comparación de la percepción y atención humana en visión por computador utilizando Vision Transformer”, Master of Science in Data Science (MSDS), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.
3. 2024. Abril Karpuj: “Detección de patrones en representaciones artísticas asociados a posibles trastornos de salud mental en los artistas: Un análisis comparativo de estilos de arte utilizando aprendizaje profundo”, Master of Science in Data Science (MSDS), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.
4. 2024. Antonio Villarroel: “Modelamiento de profundidad de sentadilla para arbitraje asistido en powerlifting”, Master of Science in Data Science (MSDS), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.
5. 2024. Matías Ramírez: “Análisis de las características y elementos visuales de imágenes basado en Deep Learning para reconocer y predecir las emociones que transmite una imagen publicitaria”. Master of Science in Data Science (MSDS), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.
6. 2024. José Aranda: “Comparación de atención visual: ViT y humana”, Master of Science in Data Science (MSDS), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.



7. 2024. Mauricio Gahona, Jonathan Toro, Alejandro Truan, Luis Manríquez: “Diseño y construcción de un predictor granulométrico para control de calidad en operaciones mineras”, Master of Artificial Intelligence, (MIA), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.
8. 2023. Raúl Dastres: “Generación automática de obras artísticas mediante el análisis de las emociones utilizando Generative Adversarial Networks”. Magíster en Ciencias de la Ingeniería (MCI), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.
9. 2023. Constanza Fainberg: “Análisis de conjunto alternativo para mejorar rendimiento de modelo de reconocimiento facial invariante a la edad”, Master of Science in Data Science (MSDS), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.
10. 2023. Joaquín Alvarado: “Obtención de superficies de objetos 3D a través de imágenes RGB-D”. Master of Science in Data Science (MSDS), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.
11. 2023. Juan Pablo Benavente, Daniel Franzani, Pietro Quercia: “Diseño y evaluación de un modelo de detección de portonazos mediante Redes Neuronales Convolucionales”. Master in Artificial Intelligence (MIA), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.
12. 2023. Cristóbal Portilla: “Análisis del comportamiento geométrico del crecimiento de colonias bacteriana”. Master of Science in Data Science (MSDS), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.
13. 2023. José Castillo: “Detección automática de la bacteria *Beggiatoa* en fondos marítimos basados en tratamiento digital de videos por medio de Redes Neuronales Convolucionales”. Magíster en Ciencias de la Ingeniería (MCI), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.
14. 2022. Germán Oviedo: “Análisis del uso del color en las representaciones visuales en el contexto de la pandemia de la COVID-19 para la detección de las emociones utilizando técnicas de minería de datos”, Magíster en Ciencias de la Ingeniería (MCI), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.
15. 2021. Ingris Figueroa, Manuel Ramos, Nicolás Rodríguez y Eduardo Oñate: “Aplicación de redes neuronales en la inspección de áreas de extracción en minería subterránea”, Master in Artificial Intelligence (MIA), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.
16. 2021. Luis Medinelli, Juan Mercado, Paula Leita: “Aplicación de técnicas de Deep Learning en el reconocimiento de emociones humanas en imágenes de baja resolución”, Master in Artificial Intelligence (MIA), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.
17. 2021. Felipe Ortiz: “Optimización de flotación de minerales utilizando algoritmos de inteligencia artificial”, Master in Data Science (MDS), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.
18. 2015. Juan Pablo Meneses: “Gestión y Monitoreo de EPP para la construcción”, Magíster en Gestión y Emprendimiento Tecnológico (MGET), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.
19. 2014. Cristian Larenas: “Monitoreo Animal en tiempo real a través de sensores”, Magíster en Gestión y Emprendimiento Tecnológico (MGET), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.
20. 2014. Enrique Cáceres: “Interacción entre personas con discapacidad motriz y aplicaciones para el desarrollo de habilidades cognitivas mediante dispositivo de seguimiento ocular”, Master in Computer Engineering, Escuela de Informática y Telecomunicaciones. Universidad Diego Portales (UDP).
21. 2013. Jorge González: “Guía de Televisión Remota para GTD Imagen”, Magíster en Gestión y Emprendimiento Tecnológico (MGET), Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez.



22. 2025. N. Chirino: "Aplicación de etiquetado semi-automático de videos para entrenamiento de modelos de visión computacional", Ingeniería Civil en Informática y Telecomunicaciones, School of Information and Telecommunications, Universidad Diego Portales.
23. 2022. T. Wachter: "Extracción de emociones en obras artísticas mediante Redes Neuronales Convolucionales", Ingeniería Civil Informática. Universidad Adolfo Ibáñez.
24. 2022. A. Mardones: "Generación de Arte utilizando Inteligencia Artificial", Ingeniería Civil Informática. Universidad Adolfo Ibáñez.
25. 2021. J. Sandoval: "Análisis cuantitativo de la representación visual de elementos de signos en el contexto COVID-19", Ingeniería Civil Informática. Universidad Adolfo Ibáñez.
26. 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 Ibáñez.
27. 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 Ibáñez.
28. 2019. F. Atala, J.L. Vallejos: "Desarrollo de Sistema de Monitoreo para Biodigestor Doméstico", Capstone Project, Ingeniería Civil Industrial – mención BioIngeniería, Ingeniería Civil Informática, Universidad Adolfo Ibáñez.
29. 2018. J. Acuña, J. Aránguiz, 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 Ibáñez.
30. 2018. J. Fernández, B. Jackson, S. Undurraga: "Automatización del control de calidad a través de visión artificial", Ingeniería Civil Industrial – mención TI. Capstone Project, JPPrint. Universidad Adolfo Ibáñez.
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63. 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**.
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#### BOOK CHAPTERS

65. 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. doi.org/10.1142/9789812770943\_0027

#### INTERNATIONAL PROJECTS

1. **Eureka + CORFO (innovaChile): Role: Research director**, Title "LIDAR-AR: a real-time construction monitoring tool for mining and civil tunnels and slope construction progress using augmented reality and lidar technology" **(2025-2026)**. **(Members: Chile, Spain):** Grant: 24CVEK- 264744 (more info at: <https://eurekanetwork.org>)
2. **RRReMaker. Research and Innovation Staff Exchange (RISE)**. H2020-MSCA-RISE-2020. Horizon 2020 Marie Skłodowska-Curie **(2021-2024)**. (Members: Spain, Italy, France, Chile, Greece, Perú, Switzerland, Malta). Principal Researcher (in Chile), researcher associate. The main objective of this project is to develop an artificial intelligence (AI) based maker platform for the design and production of handcrafted, rapid prototyped and reconditioned products, based on the availability of used goods and recyclable waste collected, getting inputs from, and connecting together, digital manufacturers and traditional crafts, designers/creative companies and green companies, establishing a new hybrid managing model based on the communities of knowledge, ecodesign and democratization invention, integrating orange, sharing and circular economy. URL <https://www.rremaker.com/>
3. STIC-AMSud. Title: "FERMI: Feature Extraction and Recognition Methods for Biological Images Understanding". **(2014-2016)**. **(Members: Peru, Brazil, France and Chile)**. STIC-AmSud regional project. **Principal Researcher (in Chile)**. 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 Ibáñez University (Chile) and the Institut de Biologie Structurale at Grenoble (France).
4. BRAHMA. UPMC-ISIR, France. **(2008-2009)**. **Role: 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, FIC-REGIONAL)

5. FIC-Regional **(2020-2022)**. Role: **Co-Director**: "Transferencia de Tecnología Inteligente para la seguridad en la pequeña minería subterránea del Distrito Minero 55 Chancón". Main Director: Miguel Herrera Marchant, Grant: IDI 40017833-0.
6. CORFO (contratos tecnológicos) **(2018-2020)**. Role: Technical Researcher/developer: "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-UA1. Grant: 17COTE83081.



7. UAI-2030 [CORFO]. (2018). Role: **Co-director**, researcher: “Determinación de curva granulométrica de suelos a través de análisis óptico en profundidad”. Project supported by UAI-Built.
8. FONDEF Idea-CONICYT (2013-2015). Role: Technical Researcher: “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.
9. FONDECYT-CONICYT (Initiation into research competition) (2011-2014). Role: **Principal Director**: “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)
10. DCC-PUC, Chile. (2007-2008). Role: Student researcher (PhD): “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.
11. DCC-PUC, Chile. (2005-2006). Role: Student researcher (PhD): “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.
12. DIINF-USACH, Chile. (2003-2004). Role: Student researcher (M.Eng): “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.

#### SEMINARS, LECTURES, WORKSHOPS

- 2025 Jury Member, Digital Country Summit Hackathon 2025 by EY, in collaboration with Las Condes - Smart City, Chile, Sept, 30.
- 2025 Specialist expositor, “Computer Vision Trends”, organized by EY (Ernst & Young) at Hackaton Summit País Digital 2025, Chile, Sept. 15.
- 2025 Expositor, “Coloquios: Doctorado en Psicología: “Detection of Emotions in Artworks Using a Convolutional Neural Network”, Universidad de Talca, Facultad de Psicología. Talca, Chile, April 2nd.
- 2024 Expositor, “Feria de Matemáticas y Tecnología”, Workshop: “Connecting the Future: Introduction and Practice with the Internet of Things”, Colegio Santa Úrsula, Vitacura Santiago, Chile. Jul, 23.
- 2024 Expositor, “Buenas Prácticas docentes”. Jornada Docencia en Ingeniería y Ciencias UAI. Universidad Adolfo Ibáñez, Chile, Feb, 29
- 2023 Expositor, “Detection of Emotions in Artworks”, Escuela Predoctoral 2023, Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez, Chile, Oct, 11.
- 2022 Expositor, “Innovando con datos, Fortaleciendo la fiscalización pública”, Seminario: Análisis de los informes de carga para encontrar embarcaciones de pesca fraudulenta, Escuela de Gobierno, Universidad Adolfo Ibáñez, Chile. Aug, 10.
- 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 Science, Universidad Adolfo Ibáñez, Viña del Mar, March 31.
- 2016 Expositor, Ciclo de Charlas: Estadística Estratégica para la toma de decisiones, “Análisis en múltiples vistas. Aplicaciones y Metodologías”. Facultad de Ingeniería y Ciencias, Universidad Adolfo Ibáñez, Sep 29.
- 2016 Workshop, “Genuino Day 2016”, Human Computer Interaction, organized by Faculty of Engineering and Science, Universidad Adolfo Ibáñez, April 4.
- 2016 Expositor, 2<sup>nd</sup> Active Learning in Engineering Education Workshop, organized by Faculty of Engineering and Science, Universidad Adolfo Ibáñez, Jan 14-15.
- 2015 Expositor, Semana de la Docencia, organized by the Centro de Innovación y Aprendizaje, Universidad Adolfo Ibáñez, Oct. 30.
- 2013 ALDyNet, Workshop on Algorithms and Randomness, organized by the Faculty of Engineering and Science, (UAI) in collaboration with INRIA Sophia-Antipolis (France), Universidad Adolfo Ibáñez, 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

- 2024 Plan de Formación de Transición para Pares Evaluadores de Procesos de Acreditación de Posgrado 2023. National Accreditation Commission (CNA), Jan. 2024.
- 2023 Active learning and learning sequences. Prof. Francisco Ayala Aguirre, TEC. Monterrey. July, 2023.
- 2023 [International Engineering Educator](#), [Ing.Paed.IGIP](#), [Innova HiEd Academy](#), Facultad Regional Buenos Aires, Universidad Tecnológica Nacional, UTN. Argentina (two year program).
- 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

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- 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

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

#### Interests

##### PHOTOGRAPHY EXPOSITOR

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- 2008 Digital photography selected to be published in the fifth edition of Schmap Budapest Guide. [www.schmap.com](http://www.schmap.com), Nov. 2008
- 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).