

# IGNACIO GABRIEL BUGUEÑO CÓRDOVA

BIRTH DATE: November 4, 1994.  
ADDRESS: Exequiel Fernández 1002, Dept. B, Ñuñoa, Santiago, Chile.  
TELEPHONE: +569 9553 2552  
E-MAIL: [i.bugueno@ieee.org](mailto:i.bugueno@ieee.org)  
WEBSITE: <https://ibugueno.github.io/>

## PROFESSIONAL SUMMARY

---

R&D Electrical Engineer, specializing in Artificial Intelligence and Telecommunications. Outstanding student, participating on multiple research projects and publications at international level (UChile Robotics Team, Advanced Communications Laboratory, and Project SUCHAI (Space and Planetary Exploration Laboratory)). Currently working as R&D Engineer at Zippedi Inc., Advisor and Consultant in Telecommunications Projects and R&D Engineer at CIRTIC, and Network Engineer at Nuevos Comienzos Televisión & Radio Inicia.

## PROFESSIONAL INTEREST AREAS

---

Artificial Intelligence, Big Data, Computer Science, Computer Vision, Data Scientist, Deep Learning, Hardware Developer, IoT, Machine Learning, Pattern Recognition, Robotics, Smart Cities, Software Programming, Telecommunications, Wireless Communications.

## ACADEMIC EDUCATION

---

- 2015 - 2018 Bachelor of Sciences in Electrical Engineering at **University of Chile**.  
Specialization: Artificial Intelligence and Telecommunications.  
Faculty of Physical Sciences and Mathematics. Santiago, Chile
- 2013 - 2014 Engineering and Science Common Plan at **University of Chile**.  
Faculty of Physical Sciences and Mathematics. Santiago, Chile

## WORK EXPERIENCE

---

- |                            |  |
|----------------------------|--|
| CURRENTLY<br>OCTOBER 2019  | TV and Radio Host at NUEVOS COMIENZOS TELEVISIÓN & INICIA<br>TV and radio host of technologies capsules "In digital words", talking about topics like science, robotics and technology. <i>Dabar Comunicaciones. Santiago, Chile.</i>          |
| CURRENTLY<br>OCTOBER 2019  | Network Engineer at RADIO INICIA<br>Developer in Communications & Development Area, belonging to Radio "Inicia", dependent of <i>Dabar Comunicaciones</i> . <a href="http://www.iniciaradio.cl">www.iniciaradio.cl</a> <i>Santiago, Chile.</i> |
| CURRENTLY<br>JULY 2019     | R&D Engineer at Zippedi Inc<br><i>R&amp;D Engineer at robotics division: Computer Vision, Robot Hardware and Self-Navigation. Zippedi Inc, Chilean Robotic StartUp. Pontifical Catholic University of Chile. Santiago, Chile.</i>              |
| JULY 2019<br>FEBRUARY 2019 | Software Developer at FollowUp<br><i>FollowUp Customer Experience. Santiago, Chile.</i>  |

JUNE 2019	Web Developer at ECODIE
MAY 2018	Website developer in Continuing Education of the Department of Electrical Engineering. <i>Faculty of Physical Sciences and Mathematics. University of Chile. Santiago, Chile.</i>
CURRENTLY	R&D Engineer at CIRTIC
JANUARY 2018	Reference Center for Technology and Innovation (CIRTIC in spanish). <i>Department of Electrical Engineering. Faculty of Physical Sciences and Mathematics. University of Chile. Santiago, Chile.</i>
CURRENTLY	Advisor and Consultant in Telecommunications Projects
DECEMBER 2017	Advisor and Consultant in Telecommunications Project linked with government programs and multinational companies. <i>Santiago, Chile.</i>
CURRENTLY	Developer at NUEVOS COMIENZOS TELEVISIÓN
OCTOBER 2017	Developer in Communications & Development Area, belonging to the Open Digital Television Channel "Nuevos Comienzos Televisión", dependent of <i>Dabar Comunicaciones. <a href="http://www.nctv.cl">www.nctv.cl</a> Santiago, Chile.</i>
FEBRUARY 2017	Data Analyst at SCOTIABANK
JANUARY 2017	Realization of Professional Practice I, in <i>Audit, Security and Investigations Division, Scotiabank, Santiago, Chile</i> , as part of the Electrical Engineering program of the <i>University of Chile.</i>

## ACADEMIC EXPERIENCE

---

CURRENTLY	IEEE Computational Intelligence, Communications & RAS Member
NOVEMBER 2019	<i>The Institute of Electrical and Electronics Engineers (IEEE). IEEE Computational Intelligence. IEEE Communications. IEEE Robotics and Automation Society. New Jersey, US.</i>
CURRENTLY	SCIREA Journal of Computer Editorial Board Member.
SEPTEMBER 2019	<i>SCIREA Journal of Computer is an international, scientific peer-reviewed open access journal published online by SCIREA.</i>
NOVEMBER 2019	Researcher, at BIOMEDICAL NEUROSCIENCE INSTITUTE
MAY 2019	Researcher in project <i>Design of an Expert System for Pressure Ulcers Prevention, Biomedical Neuroscience Institute, Faculty of Medicine, University of Chile</i> , participating as Artificial Intelligence researcher.
CURRENTLY	IEEE & IEEE Young Professionals Member
MAY 2019	<i>The Institute of Electrical and Electronics Engineers (IEEE), New Jersey, US.</i>
CURRENTLY	Expert Professor, at UNIVERSITY OF CHILE
MAY 2019	Expert Professor at Department of Telecommunications. <i>Department of Electrical Engineering. Faculty of Physical Sciences and Mathematics. University of Chile. Santiago, Chile.</i> Courses: <ul style="list-style-type: none"> <li>• Latest generation wireless technologies: 5G &amp; Big Data Analytic.</li> <li>• Green Telecommunications: Alternative Energy Solutions.</li> <li>• Regulations for Telecommunications</li> </ul>
CURRENTLY	Engineering and Applied Science Editorial Board Member.
APRIL 2019	<i>Science Publishing Group, international publisher of journals, special issues, books and conferences, covering a wide range of academic disciplines. New York, USA.</i>

CURRENTLY	Co-Researcher, between UNIVERSITY OF CHILE AND UNIVERSITY OF OTTAWA
FEBRUARY 2019	Co-Researcher in thesis project <i>The cause for the Reverse Production Effect: task difficulty or language specific?</i> , collaboration project belonging to B. López and T. S. Zamuner, <i>Department of Linguistics, University of Ottawa</i> , participating as Artificial Intelligence researcher from <i>Department of Electrical Engineering, Faculty of Physical Sciences and Mathematics, University of Chile</i> .
DECEMBER 2018	Thesis student of Electrical Engineering
SEPTEMBER 2017	Thesis work in " <i>Modeling of TICAR Infrastructure Enabling for Smart Cities with a focus on Telecommunications Networks</i> ", belonging to the Electrical Engineering program, with <i>MSc Professor Alfonso Ehijo. Faculty of Physical Sciences and Mathematics. University of Chile. Santiago, Chile</i> .
DECEMBER 2018	Laboratory Assistant of Digital Systems
AUGUST 2017	Laboratory Assistant of the course EL4002 Digital Systems, belonging to the Electrical Engineering program, given in Spring 2017, Autumn 2018 and Spring 2018, by <i>PhD Professor Ricardo Finger, in Faculty of Physical Sciences and Mathematics. University of Chile. Santiago, Chile</i> .
DECEMBER 2018	Teaching Assistant of Signals and Systems II
AUGUST 2017	Teaching assistant of the course EL4003 Signals and Systems II, belonging to the Electrical Engineering program, given in Spring 2017, Autumn 2018 and Spring 2018, by <i>PhD Professor Manuel Duarte, PhD Professor Marcos Orchard and PhD Professor Jorge Silva, in Faculty of Physical and Mathematical Sciences. University of Chile. Santiago, Chile</i> .
DECEMBER 2018	Head of Dissemination Department, at ElectroTutores
JULY 2017	Head of Dissemination Department at <i>ElectroTutores</i> , student teaching organization of the <i>Department of Electrical Engineering</i> , belonging to the <i>Faculty of Physical Sciences and Mathematics. University of Chile. Santiago, Chile</i> .
AUGUST 2017	Teaching Assistant of Principles of Communications
MARCH 2017	Teaching assistant of the course EL4005-1 Principles of Communications, belonging to the program of Electrical Engineering, given in Autumn 2017, supervised by <i>PhD Professor César Azurdia, in Faculty of Physical Sciences and Mathematics. University of Chile. Santiago, Chile</i> .
JANUARY 2016	Teaching Assistant of Experimental Physics IV: Electromagnetism
	Teaching Assistant of the course FM108-1 Experimental Physics IV: Electromagnetism, part of the Summer School program, given in January 2016, in <i>Faculty of Physical Sciences and Mathematics. University of Chile. Santiago, Chile</i> .
AUGUST 2015	Teaching Assistant of Advanced Calculus and Applications
MARCH 2015	Teaching Assistant of the course MA2002-2 Advanced Calculus and Applications, belonging to the Engineering and Science Program Common Plan, given in Autumn 2015, by <i>Professor Michal Kowalczyk, in Faculty of Physical and Mathematical Sciences. University of Chile. Santiago, Chile</i> .

## RESEARCH PROJECTS

---

SEPTEMBER 2018	Researcher at Space and Planetary Exploration Laboratory
MARCH 2018	Developer in StarTracker project, linked the SUCHAI project, supervised by PhD Marcos Díaz Quezada. <i>Department of Electrical Engineering. Faculty of Physical Sciences and Mathematics. University of Chile. Santiago, Chile.</i>
OCTOBER 2018	Researcher at Advanced Communications Laboratory
NOVEMBER 2016	Analysis, design and implementation of Nyquist Pulses in OFDM Next Generation Wireless Communication Systems, supervised by PhD Cesar Azurdia Meza. <i>Department of Electrical Engineering. Faculty of Physical Sciences and Mathematics. University of Chile. Santiago, Chile.</i>
SEPTEMBER 2018	Researcher at UChile Robotic Team
AUGUST 2016	Design and implementation of new behavior strategies and Computer Vision researcher, supervised by PhD Javier Ruiz del Solar. <i>Robotics Laboratory, Department of Electrical Engineering. Faculty of Physical Sciences and Mathematics. University of Chile. Santiago, Chile.</i>

## PUBLICATIONS

---

JUNE 2019	<p>SUBTEL: Consultas Ciudadanas - Concurso 5G en Chile.</p> <p><i>Subsecretaría de Telecomunicaciones. Ministerio de Transportes y Telecomunicaciones. Gobierno de Chile</i></p> <p><a href="https://www.subtel.gob.cl/wp-content/uploads/2019/07/Ignacio_Gabriel_Bugueno_Cordova.pdf">https://www.subtel.gob.cl/wp-content/uploads/2019/07/Ignacio_Gabriel_Bugueno_Cordova.pdf</a>.</p>
OCTOBER 2018	<p>BER Experimental Measurements in the 2.4 GHz and 5.85 GHz Bands using Software Defined Radios</p> <p><i>Ignacio Bugueño, Felipe Bahamonde, Cesar Azurdia. IEEE ICA-ACCA 2018. Concepción, Chile. In proceedings.</i></p> <p><a href="https://ieeexplore.ieee.org/document/8609737">https://ieeexplore.ieee.org/document/8609737</a></p>
JUNE 2018	<p>Playing Soccer without Colors in the SPL: A Convolutional Neural Network Approach</p> <p><i>Francisco Leiva, Nicolás Cruz, Ignacio Bugueño, Javier Ruiz-del-Solar. RoboCup Int. Symposium 2018. In proceedings.</i></p> <p><a href="https://arxiv.org/abs/1811.12493">https://arxiv.org/abs/1811.12493</a></p> <p>Cited by:</p> <ul style="list-style-type: none"><li>• Poppinga, Bernd, and Tim Laue. "JET-Net: Real-time object detection for mobile robots." RoboCup 2019.</li><li>• Kukleva, A., Khan, M.A., Farazi, H. and Behnke, S., 2019. "Utilizing Temporal Information in DeepConvolutional Network for Efficient Soccer BallDetection and Tracking". arXiv preprint arXiv:1909.02406.</li><li>• Fiedler, N., Brandt, H., Gutsche, J., Vahl, F., Hagge, J. and Bestmann, M., "An Open Source Vision Pipeline Approach for RoboCup Humanoid Soccer".</li><li>• Teimouri, M. and Delavaran, M.H., "A Real-Time Ball Detection Approach Using Convolutional Neural Networks."</li><li>• Di Giambattista, V., Fawakherji, M., Suriani, V., Bloisi, D.D. and Nardi, D., "On Field Gesture-based Robot-to-robot Communication with NAO Soccer Players."</li><li>• Daniel Barry, Munir Shah, Merel Keijsers, Humayun Khan and Banon Hopman, 2019. "xYOLO: A Model For Real-Time Object Detection In Humanoid Soccer On Low-End Hardware". arXiv preprint arXiv:1910.03159.</li></ul>

JUNE 2018	UChile Robotics Team Developments Poster - RoboCup 2018 <i>UChile Robotic Team. RoboCup 2018, Montreal, Canadá.</i>
MAY 2018	Standard Platform League Team Description Paper - RoboCup 2018 <i>UChile Robotic Team. RoboCup 2018, Montreal, Canadá.</i>
JANUARY 2018	Standard Platform League Qualification Document - RoboCup 2018 <i>UChile Robotic Team. RoboCup 2018, Montreal, Canadá.</i>
JANUARY 2017	Standard Platform League Qualification Document - RoboCup 2017 <i>UChile Robotic Team. RoboCup 2017, Nagoya, Japón.</i>

## ACHIEVEMENTS AND ACADEMIC PARTICIPATION

---

DECEMBER 2019	IEEE RAS International Summer School on Deep Learning for Robot Vision 2019 Attendance. <i>Co-organized by the Advanced Mining Technology Center of the University of Chile, the Institute of Engineering Sciences of the University of O'Higgins, and the IEEE Robotics and Automation Society. Santiago, Chile.</i>
APRIL 2019	MEIE 2019 Conference Paper Reviewer. <i>The Second International Conference on Mechanical, Electric and Industrial Engineering (MEIE2019), Hangzhou, China.</i>
OCTOBER 2018	IEEE ICA-ACCA 2018 Attendance. <i>The International Conference on Automation / XXIII Congress of the Chilean Association of Automatic Control, Concepción, Chile.</i>
JULY 2018	Congratulations Letter, Embassy of Chile in Canada. <i>Alejandro Marisio, Embassy of Chile in Canada. Ministry of Foreign Affairs of Chile. Ottawa, Canada.</i>
JUNE 2018	9 <sup>th</sup> Place RoboCup 2018. <i>22nd RoboCup International Competition and Symposium, Montreal, Canada.</i>
JUNE 2018	RoboCup 2018 Participation. <i>22nd RoboCup International Competition and Symposium, Montreal, Canada.</i>
MARCH 2018	Outstanding Student 2017. <i>Department of Electrical Engineering. University of Chile.</i>
JUNE 2017	9 <sup>th</sup> Place RoboCup 2017. <i>21st RoboCup International Competition and Symposium, Nagoya, Japan.</i>

## CONTRIBUTIONS

---

MARCH 2018 - SEPTEMBER 2018:	GitHub SPEL.
NOVEMBER 2016 - OCTOBER 2018:	GitHub Laboratorio de Telecomunicaciones.
AUGUST 2016 - SEPTEMBER 2018:	BitBucket UChile Robotics Team.

## CERTIFICATIONS

---

DECEMBER 2019		<b>3D Electromagnetic Simulation of Antennas Installed on an Aircraft</b> , IEEE.
DECEMBER 2019		<b>Simulating radar signals for meaningful radar warning receiver tests</b> , IEEE.
DECEMBER 2019		<b>Robotics Perception</b> , University of Pennsylvania.
AUGUST 2019		<b>Neural Networks for Machine Learning</b> , University of Toronto.
AUGUST 2019		<b>Control of Mobile Robots</b> , Georgia Institute of Technology.
MARCH 2018		<b>Machine Learning</b> , Stanford University.
MARCH 2018		<b>Image Processing</b> , Universitat de Barcelona.

## LANGUAGE SKILLS

---

SPANISH: Native language.  
ENGLISH: Advanced knowledge.

## COMPUTER SKILLS

---

Intermediate knowledge: AngularJS, AppleScript, Assembler, C, CSS3, Django, Eagle, GitHub, GNS3, GNU/Linux, HTML, Java, LabVIEW, MongoDB, MySQL, PHP, R, Ruby, SDR, SQL, Verilog, WordPress.

Advanced knowledge: C++, Keras, LaTeX, LTSpice, MATLAB, Microsoft Office, Numpy, OpenCV, Python, ROS, TensorFlow.

## REFERENCES

---

- |                       |   |
|-----------------------|---|
| CESÁR AZURDIA         | <p>PhD in Electronics and Radio Engineering</p> <p><i>Electronic Engineer, M. Sc. Electrical Engineering, Doctor Engineer. Assistant Professor of Electrical Engineering Department. Faculty of Physical Sciences and Mathematics. University of Chile.</i></p> <p>E-mail: <a href="mailto:cazurdia@ing.uchile.cl">cazurdia@ing.uchile.cl</a></p>   |
| ALFONSO EHJO          | <p>M. Sc. Electrical Engineering.</p> <p><i>Electrical Engineer, M. Sc. Electrical Engineering. Assistant Professor of Electrical Engineering Department. Faculty of Physical Sciences and Mathematics. University of Chile. Member of the Society of Cable Telecommunications Engineers. CTO of the Reference Center for Technology and Innovation for Latin American and Caribbean.</i></p> <p>E-mail: <a href="mailto:alfonso.ehjo@ing.uchile.cl">alfonso.ehjo@ing.uchile.cl</a></p> |
| RICARDO FINGER        | <p>PhD Engineer.</p> <p><i>Bachelor of Physical Sciences. Electrical Engineer, Doctor Engineer. Center for Excellence in Astrophysics and Associated Technologies researcher. Assistant Professor of Electrical Engineering Department. Faculty of Physical Sciences and Mathematics. University of Chile.</i></p> <p>E-mail: <a href="mailto:rfinger@das.uchile.cl">rfinger@das.uchile.cl</a></p>  |
| JAVIER RUIZ DEL SOLAR | <p>PhD Engineer.</p> <p><i>Electrical Engineer, M. Sc. Electrical Engineering, Doctor Engineer. Assistant Professor of Electrical Engineering Department. Executive Director at AMTC. Faculty of Physical Sciences and Mathematics. University of Chile.</i></p> <p>E-mail: <a href="mailto:jruizd@ing.uchile.cl">jruizd@ing.uchile.cl</a></p>  |