Manuel O. J. Olguín Muñoz

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EDUCATION

- **Ph.D. in Electrical Engineering** — Ongoing
  KTH Royal Institute of Technology — *Sep. 2017 — (Present)*

- **Engineer's Degree in Computer Science** — Graduated with Highest Honors
  Universidad de Chile — *Mar. 2011 — Aug. 2017*

- **B.Eng.Sc. in Computer Science** — Graduated with Honors
  Universidad de Chile — *Mar. 2011 — Aug. 2017*

RESEARCH EXPERIENCE

- **Carnegie Mellon University** — Pittsburgh, PA
  Visiting Researcher — *Nov. 2017 — (Present)*
  - **Satya's Elijah Group**: Participating in an on-going research collaboration with prof. Mahadev Satyanarayanan's *Elijah* group on the topic of *Edge Computing*, which considers several months per year of on-site research and collaboration at CMU's main campus in the US.

- **KTH Royal Institute of Technology** — Stockholm, Sweden
  Researcher — *Sep. 2017 — (Present)*
  - **Doctoral Researcher**: Doctoral student and researcher at the School of Electrical Engineering and Computer Science of KTH Royal Institute of Technology, with research interests broadly in the area of mobile and cloud computing, pervasive computing and low-latency systems and architectures.
    Doctoral advisor is James Gross, PhD.

- **NIC Chile Research Labs** — Santiago, Chile
  Research Assistant — *Jan. 2016 — June 2017*
  - **PVEINS**: Developed a plugin integrating a discrete event simulator (OMNeT++) with a traffic simulator (Paramics), in order to simulate large-scale Intelligent Transport System scenarios. This software was then presented as part of a Engineer's Degree Thesis.
  - **Early Warning System for Bikes in ITS**: Worked on an early warning system for bicycles in an Intelligent Transport System, as part of a research project under the supervision of Sandra Céspedes, PhD.

TEACHING EXPERIENCE

- **KTH Royal Institute of Technology** — Stockholm, Sweden
  Teaching Assistant — *Sep. 2017 — (Present)*
  - **EQ1120 Discrete Time Signals and Systems**: Course on discrete-time signals and systems, how they can be described and analyzed by using difference equations and transform methods, and be implemented in software like Matlab. Duties include teaching and grading.

- **Universidad de Chile** — Santiago, Chile
  Teaching Assistant — *Aug. 2013 — Jun. 2017*
  - **CC1000 Computer Tools for Engineering and Science**: Introductory course on computation tools, algorithmic thinking and basic computer science concepts for first year students. Duties included providing assistance at a weekly workshop and grading.
  - **CC3001 Algorithms and Data Structures**: Course on the fundamentals of algorithms (sorting, search), complexity, data structures, abstract data types and graphs. Duties included teaching and grading.
  - **CC1002 Introduction to Programming**: Course on basic programming concepts, methodologies and strategies. Duties included teaching and grading.
  - **CC3501 Computer Graphics, Visualization and Modeling for Engineers**: Course on the fundamentals of graphical programming and modeling, as well as data visualization, and how these disciplines can be applied in an interdiciplinary manner. Duties included homework design, teaching and grading.

Other Experience

- **Epistemonikos Foundation** — Santiago, Chile
  Software Developer — *Aug. 2016 — Dec. 2016*
  - **In-House Software**: Designed and deployed a number of in-house software solutions to optimize workflow and improve efficiency in the activities of the foundation (principally in the form of RESTful web services).
    Note: this activity was part of a mandatory advanced course on Software Development and Project Management.

- **Standford Honors Academy** — Santiago, Chile
  Teaching Assistant — *Jan. 2016*
  - **Game Design**: Worked as a Teaching Assistant for the Game Design class at the Stanford Honors Academy, an initiative by Stanford University and Eduexplora, to bring American graduate students as tutors for advanced topics at a summer camp for promising middle- and high school students in their own home countries.

- **NIC Chile Research Labs** — Santiago, Chile
  Software Developer — *Aug. 2015 — Dec. 2015*
  - **Image-management Microservice**: Designed, implemented and deployed a backend microservice for image management in client-server applications for Android devices. Internal NICLabs project.

- **KTH Royal Institute of Technology** — Stockholm, Sweden
  Exchange Student — *Jan. 2015 — Jun. 2015*
  - **International Exchange Program**: While studying at Universidad de Chile, spent a semester as a graduate exchange student at the Computer Science School (now School of Electrical Engineering and Computer Science) of the KTH Royal Institute of Technology.

Conferences & Workshops

- **ACM HotMobile 2019** — Santa Cruz, CA
  Paper Presentation — *Feb. 27–28 2019*

- **ACM/IEEE SEC 2018** — Bellevue, WA
  Poster Presentation — *Oct. 25–27 2018*

Grants & Stipends

- **Jubilee Appropriation** — Knut & Allice Wallenberg Foundation
  Amount: 11 000 SEK — *Feb. 2019*
  - **Travel Grant**: Scholarship primarily devoted to support for such travel which best promotes a personal scientific exchanges for the benefit of Swedish research. Funding will be mainly granted to young researchers. Funds may also be — after the President's assessment — exceptionally appropriated for foreign guest researchers.

- **Travel Grant** — US National Science Foundation
  Amount: 700 USD — *Feb. 2019*
  - **Student Travel Grant**: Grant intended to provide economic support to students attending HotMobile 2019.

Publications

[1] Manuel Olguín Muñoz, Junjue Wang, Mahadev Satyanarayanan, and James Gross. 2019. EdgeDroid: An Experimental Approach to Benchmarking Human-in-the-Loop Applications. In *The 20th International Workshop on Mobile Computing Systems and Applications (HotMobile '19)*. Accepted paper submission.

[2] Manuel Olguín Muñoz, Junjue Wang, Mahadev Satyanarayanan, and James Gross. 2018. Demo: Scaling on the Edge – A Benchmarking Suite for Human-in-the-Loop Applications. In *2018 IEEE/ACM Symposium on Edge Computing (SEC)*, 323–325. DOI: 10.1109/SEC.2018.00031.

[3] Manuel Olguín Muñoz. 2017. *Diseño e Implementación de un Framework Integrado para Simulaciones de Sistemas Inteligentes de Transporte en OMNeT++ y Paramics*. Engineer's Degree Thesis. Universidad de Chile, Santiago, Chile. http://repositorio.uchile.cl/handle/2250/147392.

Technical Skills

- Programming languages: Python, Java, C++, C, Bash, Racket, Javascript.
- Markup languages: HTML+CSS, LaTeX, Markdown.
- Operating Systems: advanced skills in Linux-based OSs.
- Data Visualization: Matplotlib, D3JS, Tableau.

Languages

Spanish *(Native)*, **English** *(Fluent)*, **Swedish** *(Fluent)*.

Extracurricular Activities, Interests & Misc.

- **Social Dance at KI** — Stockholm, Sweden
  Volunteer — *Jan. 2017 — (Present)*
  - **Cuban Salsa and Rueda de Casino Instructor**: *Social Dance at KI* is one of the projects of the Medical Society at Karolinska Institutet, organized once every week, that offers dance lessons in Salsa LA, Salsa Cubana, Rueda and Bachata, on beginner and beginner/intermediate level.

- **Beauchef International Community** — Santiago, Chile
  Student Member — *2014 — 2017*
  - **Board Member**: The Beauchef International Community is the international community of Universidad de Chile's Faculty of Physical and Mathematical Sciences, tasked with welcoming and guiding international students during their time in Chile.

- **Pedalea! Beauchef** — Santiago, Chile
  Student Member — *2013 — 2015*
  - **Bike Mechanic and Board Member**: Pedalea! Beauchef is a organization formed by students of the Faculty of Physical and Mathematical Sciences of Universidad de Chile, with the goal of incentivizing bicycle culture amongst students. The organization maintains a bicycle repair workshop on campus and organizes a multitude of events every semester.

- **ATA Taekwondo** — Santiago, Chile
  1st Degree Black Belt — *2008 — 2013*

References

- **James Gross**, Associate Professor of Electrical Engineering.
  School of Electrical Engineering and Computer Science, KTH Royal Institute of Technology.
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  `http://www.jamesgross.org/`

- **Sandra Céspedes**, Assistant Professor of Electrical Engineering.
  Department of Electrical Engineering, Universidad de Chile.
  +56-2-29784093 | `scespedes@ing.uchile.cl`
  `https://www.cec.uchile.cl/ scespedes/`

- **Jérémy Barbay**, Assistant Professor of Computer Science.
  Department of Computer Science, Universidad de Chile.
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  `http://barbay.cl/`