# Profile

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**Agustín Tomás**

**Escobar Blanc**

M.Sc. in Theoretical Physics

Pontifical Catholic

University Of Chile

Ms. Sci. In Physics with experience in numerical computation in python. Experience with TensorFlow’s python library in machine learning applied to industry and building data pipelines with Google Cloud Platform. Academic interests lie in condensed matter physics, quantum computation and physics of complex systems. Professional interest in the application of Big Data tools to various industries.

# Working Experience

Consultant at Konstruyendo.com (Santiago, Chile, January 1st 2020 to date)

Leading Data Scientist in an homologation project to automate the onboarding process for Konstruyendo’s clients.

Data Scientist at SECOM (Santiago, Chile, July 1st 2019 to date)

Data Scientist at the Communications Secretariat at the Ministry General Secretariat of Government (Chilean Government).

Data Scientist At Management Solution (Santiago, Chile, February 1st 2019 until April 25th)

Assistant 1 at Management Solutions international firm. Currently working in data science in a financial institution.

Challenge 53 - SONDA from the Sin Límites Program (Santiago, Chile, 2018)

In this project we used machine learning algorithms to predict the probability of winning an open business opportunity within a particular year for the multinational company SONDA. With a team of 3, we planned and executed the entire process from cleaning the dataset and determined relevant variables to the implementation and serving of the algorithm itself.

Teacher of Physics and Robotics at Pucalán Montessori High School (Santiago, Chile, February 2018 to February 2019)

Taught physics, robotics and electronics for students from 12 to 18 years old.

# Research Experience

Master Thesis, Pontificia Universidad Católica de Chile (Santiago, Chile, 2018 to date)

Titled “Mathematical Model of Concentration and Electric Field In Electrolyte Disolution Under REDOX reaction”, this project seeks to obtain a theoretical model to explain the relation of the concentration of copper-sulfate in electro-refineries of copper and connect it to nano-diamond based sensor measurements (NV-Center).

Undergraduate Thesis, Pontificia Universidad Católica de Chile (Santiago, Chile, January 2017 to July 2017 )

Titled “Transport Coefficients through a quantum dot in the Anderson Impurity Model”. We computed the electric and thermal conductivity and the Seebeck or thermoelectric coefficient through a magnetic impurity in a conductor.

Summer Internship, Efficiency Of A Quantum Thermodynamic Engine, Pontificia Universidad Católica de Chile (Santiago de Chile, January 2016)

Theoretical project in which we computed the efficiency of thermodynamic engine based on an electron constrained to a graphene flake, controlled by an external magnetic field.

Cosmic Ray Telescope, HEPLAB UC (Santiago, Chile, 2014–2016)

Project at the High Energy Physics Laboratory where we built a Cosmic Ray Telescope based on plastic scintillators. The data was captured by an Arduino Uno board.

# Programming Projects

Automated Residue Scale, Reforest Start Up (Santiago, August 2018 to date)

Automated scale to measure recycled residues from users of Reforest´s recycling pick up service. The scale connects through a Raspberry Pi to a RESTful API written in nodejs. I lead the project and was in charge of the hardware part. The RESTApi was design and reviewed by me but programmed by a student of mine.

# Poster Presentation

School of Nanotechnology, Universidad Técnica Fereríco Santa María (Valparaíso, January 2019)

Presented thesis developments in the School of Nanotechnology organized by the UTFSM university in Valparaíso.

# Education

Pontificia Universidad Católica de Chile, Master In Physics Candidate (Santiago, Chile, August 2018 to date)

Pontificia Universidad Católica de Chile, B. Sc. Degree in Physics, (Santiago, Chile, March 2012 to July 2017)

Universidad de Chile, Summer School in Biotechnology, (Santiago, Chile, January 2008)

Colegio Pucalán Montessori (Santiago, Chile, 2010 Promotion )

Riccarton High School (New Zealand , October 2008 to march 2009)

# Skills

Programming languages and digital tools

Python Advanced

LATEX Advanced

Arduino Advanced

Google Cloud Platform Intermediate

HTML y CSS Intermediate

JavaScript Intermediate

NodeJS Intermediate

C, C++ Basic

Root (CERN) Basic

# Languages

Spanish: Native

English: Fluid

French: Basic

# References

1. **PhD. Enrique Muñoz Tavera**. Head of the doctoral program at Universidad Católica de Chile. [munoztavera@gmail.com](mailto:munoztavera@gmail.com)
2. **Paulina Vigneaux**. Academic coordinator at Pucalán Montessori High School. [pvigneaux@pucalan.cl](mailto:pvigneaux@pucalan.cl)