

# Ydalia Delgado-Mercado

## Resume



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## EDUCATION

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| APR 2010 – MAR 2013 | <b>Ph.D., Theoretical Physics</b> (graduated with honors)<br>Karl-Franzens-Universität (KFU), Graz, Austria  |
| 2007 – 2009         | <b>M.Sc., Theoretical Physics</b> (graduated with honors)<br>Pontificia Universidad Católica del Perú (PUCP), Lima, Peru<br>CERN, Geneva, Switzerland                    |
| 2000 – 2006         | <b>B.Sc. Physics</b> (graduated with honors)<br>(2000-2003) Electronics Engineering / (2003-2006) Physics<br>Pontificia Universidad Católica del Perú (PUCP), Lima, Peru |

## EXPERIENCE

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### Backend engineer:

- Intern for 13 months at [Runway20 Inc.](#), California, USA (remote position).
- Building data pipelines.
- Data analysis tools.
- Shipping code into production.

### Data analysis (research):

- *Doctoral (2010-2013) and Postdoctoral (Apr 2013-Jul 2014) positions, KFU - Graz, Austria*  
Monte Carlo algorithms, time-series analysis, correlations, and statistics.
- *Stay at the University of Wuppertal, Germany (Mar-Jul 2012)*  
Optimization of gradient descent algorithms using CUDA.
- *Member of the ALICE experiment's data analysis group, PUCP, Peru (2006-2010)*  
Statistics, simulation and optimization of the design of measuring instruments.
- *Stay at the University of Sao Paulo (USP), Brazil (Mar-Apr 2009)*  
Model fitting, statistics
- *Member of the ALICE experiment's [data analysis group](#), CERN - Geneva, Switzerland (2006-2009)*  
Bayesian statistics, work in large collaborations.

## ACCOMPLISHMENTS

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- Deployed code to production for Weld.
- Development of own web application from scratch (independent project). [Code on Github](#).
- Co-invented a more efficient [Monte Carlo algorithm](#).
- Member of the [ALICE-LHC](#)/CERN collaboration. One of the largest experiments on particle physics, where 36 countries and 2000 researchers are involved.
- Working independently on own projects (during my positions at the KFU).
- Flexibility to work on rather different topics.
- Transfer knowledge: 11 talks (2 as invited speaker) and 6 posters in international conferences.
- Publications in top international journals: 8 papers in theoretical physics, 8 conference proceedings (total of 120 citations) and 12 papers in experimental physics (1500 citations).

## SKILLS

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**Computer Skills:** Python, Django, Tornado  
SQL: MySQL and Postgresql  
C/C++, Fortran, Cuda, MPI  
L<sup>A</sup>T<sub>E</sub>X, HTML/CSS  
Linux, BASH  
Matlab

**Language Skills:** Spanish (native)  
English (advanced)  
German (intermediate)

## AWARDS AND GRANTS

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- **Marie Curie Grant** for PhD studies at KFU, Graz (2010, 3 Year)
- **HELEN Grant** to work at: USP, Brazil (2009, 2 Month) and CERN (2006-2008, 10 Month)
- **Awards** for Master Thesis: Galileo-PUCP (2009) and PAIP-PUCP (2008)
- **Scholarship** for the Master program at PUCP, Peru (2007, 2 Year)
- PAIN-PUCP **award** for undergrad. students involved in a research project (2005)
- ERA **Scholarship** for outstanding performance in undergrad. studies, PUCP (2002, 4 Year)

## ADDITIONAL INFORMATION

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### Teaching:

- Lecture course at KFU, Austria (Postgraduate level - Summer 2014)
- Teaching assistant at PUCP, Peru (2007-2009)

### Volunteering:

- Work as a volunteer at the Elephant Nature Park **EPN**, Thailand (2013)
- Participation in social projects with poor families, Peru (2000-2009)

### Organization:

- **STRONGnet** conference organization in Graz (2013)