

Andrew Hard

Résumé

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EDUCATION

- 2016 **Doctor of Philosophy** in Physics
University of Wisconsin, Madison WI, USA
Thesis: *Search and discovery with the resonant $\gamma\gamma$ final state at ATLAS*
Advised by Prof. Sau Lan Wu
- 2010 **Bachelor of Arts** in Physics, Honors
University of Chicago, Chicago IL, USA
Advised by Prof. Edward Blucher

EXPERIENCE

- 2019 - Present **Senior Software Engineer**, Google
 - TL and manager for multiple interns and projects
 - Researched and built federated acoustic models for Assistant with TensorFlow, Python
 - Interviewed 100 candidates for SWE and ML positions
- 2017 - 2019 **Software Engineer**, Google
 - Researched generative text models with federated learning and differential privacy
 - Published work on federated training for recurrent neural language models
 - Developed multi-word prediction networks for Gboard with TensorFlow, C++, Python
- 2011 - 2016 **Graduate Research Assistant**, *Department of Physics, University of Wisconsin*
 - Discovered Higgs boson, performed first measurements of mass, couplings, and spin
 - Optimized physics searches with TB-scale datasets using machine learning techniques
 - Statistical expert, created new Monte Carlo method to reduce CPU usage by $1000\times$
- 2014 **Graduate Teaching Assistant**, *Department of Physics, University of Wisconsin*
 - Led discussions and labs on classical mechanics, electrodynamics, thermodynamics
 - Designed supplemental exercises and summary notes that boosted exam performances
- 2010 - 2011 **CERN Technologist**, *Enrico Fermi Institute, University of Chicago*
 - Developed & maintained calibration software package using Python and MySQL

SKILLS

- Scientific** Physics, Statistics, Simulation, Numerical Methods, Data Structures, High Throughput Computing, Databases, Machine Learning, Public Presentation
- Programming** C++, Python, TensorFlow, Java, Go, \LaTeX , Unix/Linux shell scripting, ROOT, Matlab, SQL
- Languages** English (native), French (basic oral and written communication), German (A1.3)

VOLUNTEERING & OUTREACH



- Participate in industry panel discussions and advisory board for physicists 2019
- Newtonian physics demonstration for Chicago Public Library 2016
- US voter outreach & registration at CERN 2016
- Discussed research & funding with U.S. lawmakers in Washington D.C. 2014, 2015
- Science outreach at the Chattanooga School for the Arts & Sciences 2012

AWARDS

- 2015 **Teaching Assistant Rookie of the Year**, *Department of Physics, University of Wisconsin*
2013, 2014 **Lightning Round Winner**, *US LHC User's Association Annual Meeting*