

Alex Ryckman Mellnik

DATA SCIENCE · ANALYTICAL DEVELOPMENT · PHYSICS

☎ (704) 301-1751 | ✉ a.r.mellnik@gmail.com | 🏠 alex.mellnik.net | 📷 amellnik | 🌐 amellnik

Skills

- Data Science** Inference, Optimization, Regression, Classification, Neural Networks, ETL, Tool Development
Experienced with solving novel analytical challenges and working with cross-functional teams
- Development** Julia, Java/TypeScript, C/C++, Matlab/Octave, Angular, Node, Git, Jupyter, Docker, Linux, Python
Contributor to Julia packages for web interoperability and data science
- Physics** Nanomagnetism, Nanofabrication, Metrology, Spin Torque Ferromagnetic Resonance
Experimental Design, Automation, Low Temperature Magnetotransport Measurement

Education

- 2014 **Ph.D. in Physics**, Cornell University *Ithaca, NY*
2009 **B.S. in Physics & Astronomy**, University of North Carolina at Chapel Hill *Chapel Hill, NC*

Experience

Intel

Hillsboro, OR

PRODUCT ENGINEER

July 2016 - Present

- Lead large-scale analysis projects for the Product Engineering team which have been credited with >\$100M in savings.
- Developed models for next-generation process node yield and performance using test data from products and testchips.
- Developed a suite of tools now used for predictive yield modeling across Intel.
- Created multiple data-driven, full-stack web applications that enable self-service analysis by yield and product teams.

Intel Custom Foundry

Hillsboro, OR

YIELD ANALYSIS ENGINEER

March 2015 - July 2016

- Developed a full-stack data ETL and analysis suite which streamlined first-line debug/analysis for foundry products and created an interactive web-based dashboard system.
- Lead the development of critical customer-facing/internal tools and supported yield analysis on foundry products.

Ralph Group, Physics Department, Cornell University

Ithaca, NY

GRADUATE RESEARCHER

May 2009 - March 2015

- Graduate research provided the first experimental evidence that topological insulators are incredibly efficient at generating spin torques and was published in *Nature* and *Applied Physics Letters*.
- Developed novel fabrication and experimental techniques, and lead the construction of a new system for measuring spin torques optically at cryogenic temperatures.
- Awarded Department of Energy Office of Science Graduate Research Fellowship, Cornell University Graduate Fellowship, National Science Foundation Graduate Research Fellowship (*declined*).

Advanced Epitaxial Research Group, UNC Chapel Hill

Chapel Hill, NC

UNDERGRADUATE RESEARCHER

December 2005 - May 2009

- Developed new microelectronic fabrication protocols for transport devices using magnetic semiconductors, developed experimental automation and analysis software with Professor Frank Tsui's research group.
- Awarded Robert Sheldon Award for Excellence in Undergraduate Research (2008 & 2009)
- Graduated with *Highest Distinction*, thesis awarded *Highest Honors*.