

## Richard A. Ott

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**Data Analyst and Developer** with 10 years experience developing scientific and commercial data processing software, data visualizations, simulations and mathematical models of systems using C++ and Scala in Linux and AWS cloud environments. Analyzed gigabyte to terabyte scale data sets. Led teams of scientists, taught courses, mentored students. Possess strong presentation, written, and oral communication skills. Proficiencies include:

- Data importation, analysis
  - Teaching and mentoring
  - Oral and written presentation
  - Linux/Unix environment
  - Bash scripting
  - Scientific programming
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- EDUCATION**     **Massachusetts Institute of Technology**, Cambridge, MA  
Ph.D. in Physics     2003 – 2011
- University of Maryland, College Park**, College Park, MD  
B.S. in Physics, B.S. in Mathematics, Summa cum laude     1999 – 2003
- EXPERIENCE**     **The Data Incubator**, San Jose, CA  
*Data Scientist in Residence*     2017 – current
- Developed curricula and taught fellows and corporate trainings on data science related topics
  - Supported automated systems for CI, cloud deployment, and grading
- Verizon/AOL, go90 project**, San Jose, CA  
*Senior Software Developer*     2014 – 2017
- Designed and developed software in Scala and Spark for importation and analysis of user behavior data from heterogeneous sources
  - Maintained and upgraded existing data import and analysis software
  - Created python scripts to automate Redshift SQL table management in Amazon Web Services through Jenkins system
  - Architected and implemented automated processes in Chronos/Mesos to export data to external groups and to group users by specified behaviors
  - Collaborated within direct team of 10 to 12 and larger go90 department of approximately 100
- University of California, Davis**, Davis, CA  
*Postdoctoral Researcher*, S. Mani Tripathi & LUX collaboration     2012 – 2014
- Collaborated with international team of 80+ scientists (LUX collaboration) on direct dark matter detection experiment
  - Led and mentored team of 3-7 students analyzing data using a variety of techniques, including multivariate machine learning
  - Worked on statistical analysis of LUX data for publication, developed extended C++ statistical software to incorporate improved analyses
  - Developed mathematical models of detector systems
  - Managed design and construction of improved Compton-suppressed gamma ray detector for isotopic analysis of samples

- Presented scientific progress and results at conferences and collaboration meetings
- Designed and taught two hands-on summer courses on gamma ray detectors

*Deputy Science Coordination Manager*, LUX collaboration April – June 2013

- Led and managed operations of scientific team (5-10 scientists) at experimental site during primary data collection
- Set schedule to ensure all scientific operations were completed within time frame, delegated tasks and followed up to ensure goals were met
- Operated and maintained particle detector as part of team, monitored detector status, tested detector stability, and troubleshoot equipment
- Utilized cryogenics, vacuum systems, radioactive sources, and high voltages
- Reviewed, tested and edited Standard Operating Procedures for clarity, accuracy and safety in underground laboratory environment
- Participated in teleconferences to explain scientific research and facilities to high school students

**Veritas Tutors**, Cambridge, MA

*Physics and Math Tutor* 2011 – 2012

- Tutored students in a variety of physics and math subjects ranging from early high school to advanced undergraduate
- Customized lesson plans for each student

**Massachusetts Institute of Technology**, Cambridge, MA

*Research Assistant*, Sudbury Neutrino Observatory (SNO) 2005 – 2011

- Collaborated with international team of 100+ scientists (SNO collaboration) to study solar neutrino mixing properties
- Designed and developed analysis software in C++ and ROOT using 1000+ node Linux cluster, now being adapted for other experiments
- Studied detector systematic uncertainties using calibration data
- Analyzed detector data for the final SNO results
- Presented findings at collaboration meetings to 100+ scientists
- Wrote technical reports for collaboration evaluation

*Teaching Assistant*, Department of Physics 2005 – 2011

- Taught introductory undergraduate physics and advanced laboratory sections
- Designed homework and solutions, helped develop courses
- Prepared and troubleshoot experiments, equipment and demonstrations
- Supervised and mentored undergraduate teaching assistants
- Honored with two teaching awards

**SKILLS** **Computer:** Linux, Windows, OSX, C/C++, Scala, SQL, bash script, data analysis, scientific computing, LaTeX, git, subversion, MS Office, LibreOffice/OpenOffice

**PUBLICATIONS** 12 co-author; 3 internal reports; 3 conference presentations