Shih-Ho Cheng

Resume

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Please email me for additional contact info

Objective

To obtain a full-time position as a data scientist, data analyst, or quantitative analyst using my expertise in scientific data analysis and computing

Education

August 2013 (expected) **Ph.D., Physics**, *The Pennsylvania State University*, University Park.
- Eklund Memorial Lectureship Award, 2013
- Braddock Fellowship, 2007-2008

May 2006 **B.S., Physics with Distinction**, *University of Virginia*, Charlottesville.
- Second Major in Mathematics
- Dean's List: 6/8 semesters

Skills

Analytic Machine learning (naive Bayes, decision trees, boosting methods, neural networks, SVM, Model Mixtures, etc.), statistical analysis, multivariate statistics, spatial statistics, numerical methods, Monte Carlo methods, and advanced Mathematics

Programming Expertise in C/C++ (STL, Boost), R, and Python (numpy, scipy, matplotlib, and other analysis related modules). Proficient with shell scripting and MySQL. Experience with OpenMP and MPI. Advanced Unix/Linux user. Working experience with subversion and git

Other Experience handling and analyzing large-scale data with awk/sed, C/C++, Python, and R

Language Multilingual: native fluency in Spanish, Chinese, and Taiwanese. Full professional fluency in English

Research and Teaching Experience

2010–Present **Research Assistant in Computational High Energy Astro-particle Physics**,
Department of Physics, Penn State University, University Park.
- Developed and analyzed methods of anomaly detection for cosmic ray data
- Developed the ASDA software in C++ for the mapping and statistical study of cosmic ray anisotropy
- Implemented several machine learning algorithms to study the classification of proton/iron cosmic rays primaries
- Developed analytic software in C++, Python, and R to perform several statistical analysis on large-scale data from the Pierre Auger Observatory
- Developed Monte Carlo and numerical methods to obtain a statistical robust calculation of the surface detector angular resolution
- Implemented clustering analysis on Monte Carlo simulations and observed data of cosmic ray showers
- Gave several presentations at international conferences. Received the Eklund Lectureship award for research significance and ability to present it to a general audience

2008–2010 **Research Assistant in Experimental Condensed Matter Physics**,
Department of Physics, Penn State University, University Park.
- Synthesized graphene fluoride (CF) by exposing graphene to CF4 plasma. Characterized CF and defluorinated CF with atomic force microscopy, X-ray diffraction, and micro-Raman spectroscopy
- Designed and fabricated nano-devices from CF and defluorinated CF using e-beam lithography and metal deposition. Performed low temperature transport measurements under magnetic field

2007–2009 **Teaching Assistant**,
Department of Physics, Penn State University, University Park.
- Instructor for recitation and lab sections for PHYS211
- Instructor for recitation and lab sections for PHYS212