Iwona Pawelczak
Green Card Holder
New York, NY
E-Mail: iwona.pawelczak@gmail.com, Phone: (585)350-6098
GitHub: https://github.com/iwonapawel/

Objective

Data Scientist – statistical analysis and machine learning

Summary

Researcher in nuclear physics entering a career in Data Science. Ability to perform research demonstrated by development of data analysis oriented strategy and products, recognized by several awards. Extensive experience presenting new concepts and results to internal and external audience. And proven publication record in peer-reviewed journals, as well as a patent.

Skills

Technical:

- Analytic: Machine learning (linear regression, classification, clustering), statistical analysis, Monte Carlo techniques, Natural Language Processing

Programming:

- Python (Pandas, NumPy, Matplotlib, Scikit-learn, StatsModels, Flask), SQL, MongoDB, Hadoop, Hive, fortran, some C/C++, MPI

Professional Experience

Data Scientist — *Apr 2015 – Present*
Metis, New York, NY
Created and presented the following projects:

- Using an open source data of the New York state and Python libraries (pandas, numpy, matplotlib, scikit-learn, statsmodels) found parameters that drive patient cost for various medical procedures
- Using Python (pandas, numpy, matplotlib, scikit-learn) and patient medical history developed classification model to predict patients heart disease
- Using Python and MTA turnstile data optimized deployment of a non-profit's street team to maximize attendance at an upcoming fundraising gala
- Scraped BoxOfficeMojo with Beautifulsoup, and developed linear regression model using scikit-learn and statsmodels to predict movies domestic revenue

Post-Doctoral Researcher — *Jan 2011– Oct 2014*
Lawrence Livermore National Laboratory, Livermore, CA

- Built models, performed Monte-Carlo simulation calculations (MPI, cloud computing), and developed scripts that provided insight into understanding of correlated and uncorrelated neutron backgrounds related to Special Nuclear Material Detection
- Performed experiments and developed scripts for data analysis to investigate properties of many detectors that resulted in significant detector developments for nuclear security applications recognized by many awards

Research Assistant — *Jun 2004 – Aug 2010*
University of Rochester, Rochester, NY

- Developed routines in fortran95 and merged multiple routines into one unified code used for calculations of Detection Efficiency of Neutrons in Scintillators
- Developed and merged routines for automatic calibration of detector array
- Analysis of experimental and simulation data resulted in development of a new neutron detector

Teaching Assistant — *Sep 2002 – May 2002*
University of Rochester, Rochester, NY

- Assisted students in learning laboratory techniques in general and physical chemistry
- Provided out of laboratory help for students and graded laboratory reports and exams

Education

Ph.D., M.S. in Chemistry
***University of Rochester**, Rochester, NY*

M.S. in Chemistry
***Jagiellonian University**, Cracow, Poland*

Certifications

In recognition of the successful completion of a 475 hour curriculum in Data Science, Metis, New York, NY, June 2015.

Selected Publications

P. Martinez, **I.A. Pawelczak**, A. M. Glenn, N. Zaitseva, L. Carman, S. Payne, *PSD in Non-aromatic Plastic,* Nucl. Instr. Meth. A 771, 28 (2015).

I.A. Pawelczak, A. M. Glenn, N. Zaitseva, P. Martinez, L. Carman, S. Payne, *Boron-loaded Plastic Scintillator with Neutron-Gamma Pulse Shape Discrimination Capability,* Nucl. Instr. Meth. A 751, 62 (2014).

I. A. Pawelczak, S. Ouedraogo, A. M. Glenn, R. Wurtz, L. Nakae, *Studies of Neutron-Gamma Pulse Shape Discrimination in EJ-309 using Charge Integration Method*, Nucl. Instr. Meth. A 711, 21 (2013).

N. Zaitseva, B. L. Rupert, **I. Pawelczak**, A. Glenn, H. Paul Martinez, Leslie Carman, M. Faust, N. Cherepy, S. Payne, *Plastic scintillators with efficient neutron/gamma pulse shape discrimination.* Nucl. Instr. Meth. A 668, 88 (2012).

Natalia P. Zaitseva, M. Leslie Carman, Michelle A. Faust, Andrew M. Glenn, H. Paul Martinez, **Iwona A. Pawelczak**, Stephen A. Payne, Keith E. Lewis, *System and plastic scintillator for discrimination of thermal neutron, fast neutron, and gamma radiation.* US Patent App. 13/471, 259, (2012).

I. A. Pawelczak, J. Toke, E. Henry, M. Quinlan, H. Signh and W. U. Schroeder *NSTAR - a Capture Gated Plastic Neutron Detector*, Nucl. Instr. Meth. A 629, 230 (2011).

Awards

Director's S&T Award, November 2013

R&D100 Award, November 2012

Physical and Life Sciences Directorate Award, September 2012

Physical and Life Sciences Directorate Award, May 2012

Global Security Directorate Silver Awards, September 2011