

**Jonathon M. Schuler**  
Pittsburgh, PA 15217  
(571) 338-6205  
[jonathon.schuler@gmail.com](mailto:jonathon.schuler@gmail.com)

## **SUMMARY**

Data Scientist adept at extracting requirements, creating testable hypothesis, processing very large data sets, communicating relevant insights for decision makers. Proficient in linear and logistic regression, decision trees, CART, random forests, support vector machines, time series analysis, survival analysis, graph theory, clustering, numerical optimization, non-parametric statistics, signal and image processing. Skilled with Python, MATLAB, SQL, R, SAS, SPSS, ENVI/IDL, Java, C#, C++, FORTRAN, Perl, Linux, Hadoop, NoSQL.

**SECURITY CLEARANCE:** inactive Top Secret/SCI (valid through October 2018)

## **PROFESSIONAL EXPERIENCE**

### **Associate Vice President**

**June 2016 - Present**

PNC Bank, Pittsburgh PA

- Business process optimization of call center activity through computational analysis of operations data. Iterative development of research questions, statistical tests, and actionable recommendations in close partnership with senior bank executives.

### **Consulting: FAC Advisory Services**

**November 2013 – June 2016**

Software Architect, Systems Engineer, Lead Scientist  
Pittsburgh PA, Washington DC, and New York, NY

- Developed business model and systems engineering to transform a MATLAB prototype into a high-throughput Python + MySQL subscription service that alerts users to tradeable epochs of illiquidity within domestic equities, benchmarked by false-alarm/missed-detection error probabilities.
- Clinically tested product and evaluated performance with pre-qualified partner clients.
- Undertook hand's-on infrastructure development as the sole developer using Linux, Python (NumPy, SciPy, Scikit-Learn, StatsModels, Pandas, Beautiful Soup), SQLite, MySQL, Virtual Box, VM Ware, SSL and PKI encryption, Amazon EC2 hosting.

### **Consulting: Interim Chief Data Scientist**

**June 2015-October 2015**

Randstad Technologies contract support for Nexosis, Inc. Columbus OH

- Provided short-term support for a start-up data mining company.
- Established technical foundation for a machine learning approach to order forecasting and marketing-mix modeling in the CPG arena.
- Transitioned Python prototype to C# production environment hosted on Azure.

### **Consulting: Information Security Engineer**

**May 2013 - November 2013**

Software Engineering Institute, Pittsburgh PA

- Developed statistical design-of-experiments for sentiment-survey instruments developed by the Cyber Resilience and Measurement Initiative
- Assessed security risks in U.S. critical infrastructure and federal government. Provided direct support to the Department of Homeland Security, Department of Energy

**Consulting: Survey Statistician****May 2013 – October 2016**

Insight Evaluations, Fairfax VA

- Developed statistical methodologies and computational analysis of commissioned surveys to assess audience experience and impressions. Clients include The Smithsonian Air and Space Museum, Museum of Natural History, Montgomery County Parks and Recreation, University of Virginia Alumni Association.

**Information Systems Engineer****October 2007 - May 2013**

The MITRE Corporation, McLean VA

- Applied data science to defense-intelligence business processes through statistical computation of large data sets. Delivered numerous presentations to convey results and recommendations to managerial staff of the Undersecretary of Defense for Intelligence, Defense Intelligence Agency, U.S. Army Intelligence and Security Command, U.S. Department of Justice, U.S. Department of Health and Human Services.
- Established data science process controls for a U.S. Army biometric intelligence production center. Simplified over 1000 heuristic business rules triaging enrollment history into fewer than a dozen categories with substantially improved prediction accuracy. Quantified backlog risk exposure, created optimal queues for analysts, and generated statistically predictive watch-lists deployed in-theater.
- Served as program statistician for an IARPA psychological study. Consolidated analysis across several research teams and terabytes of neurophysiologic signal data. Applied logistic regression and nonparametric statistics to down-select promising signal channels.
- Assessed performance of machine-learning systems to detect malicious insider threats based on monitoring workplace cyber-behaviors. Established benchmarks demonstrating the collected data was statistically inoperative as a predictive indicator. Ushered process transformations, including pilot studies of candidate data sources having useful cross-interactions with the cyber data.
- Implemented Applied Analytic Hierarchy Processing (AHP) as a framework to computationally rank infrastructure risks to the U.S medical supply chain based on “Voice of the Customer” survey assessments of an expert focus-groups. Delivered decision-support software and recommendations.
- Developed and delivered corporate-internal training classes on linear regression analysis and ANOVA.

**Scientist****July 2004 – October 2007**

Logos Technologies, Inc., Arlington VA

- Derived statistical methodologies for weak-signature gamma-ray imaging by Compton scatter cameras, applied to the interdiction of nuclear fissile materials via portal monitors.
- Developed and field-tested magnetometer signal processing algorithms for a rapidly fielded suites of counter-IED protection measures for mounted ground forces.
- Constructed novel hyperspectral image registration and wavelet-based signature analysis methodologies; delivery as integrated GIS software tools.

**Electrical Engineer****August 1995- July 2004**

Naval Research Laboratory, Washington DC

- Originated algorithm and software to increase the spatial resolution of an imaging system using multiple displaced exposures (U.S. Patent 7,248,751)
- Developed and implemented high-accuracy image registration and geo-location algorithms.
- Delivered support software for radiometric calibration, multi-spectral color image fusion, adaptive non-uniformity correction, and sensor modeling/simulation.
- Published over fifty conference presentations, book chapters, peer-reviewed journal articles; twenty as lead author. (Best Paper Award, MSS Specialty Group on Passive Sensors 2002)

**EDUCATION**

Ph.D. Computational Science and Informatics  
George Mason University, Fairfax VA

M.S.E.E – signal and image processing  
Purdue University, West Lafayette IN

B.S. Physics  
Purdue University West Lafayette, IN