NICHOLAS KALLFA

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PROFILE

Data scientist with over 5 years of education and experience in data and statistical analysis. Experience includes using multiple software or programming languages including R, SQL, and Python. Recently, I have aided in the development of statistical-based models, methodologies, and cloud-based software for government clients.

EXPERIENCE

Booz Allen Hamilton   July 2017 - Present
Data Scientist   *McLean, VA*

Support to U.S. Government Customer, June 2019 - Present
· Developed ingest pipeline utilizing Amazon Web Services S3, Lambda, SQS, and CloudWatch to automatically index data (160TB+) into Elasticsearch
· Conducted analyses joining publicly available social media data with privately-held data to detect trends and patterns
· Performed custom analyses of data creating visualizations/dashboards in Kibana and Python
· Developed functions for conducting bulk queries/exports from Elasticsearch into S3 and output into various formats
· Developed code in Python using regular expressions for automatically extracting fields of interest from reports
· Training developers how to index data (2TB) into Elasticsearch for search by users

Support to DoD Cost Assessment and Program Evaluation, September 2017 - June 2019
· Developed novel method to model DoN mission capable reporting. Used model to examine the impacts in mission capable reporting under business rules more closely aligned with DoD policy
· Developed machine learning models (logistic regression, random forests, decision trees, support vector machines, etc...) to identify factors affecting F/A-18 mission capable rates and quantify their relative importance
· Produced R Shiny applications and visualizations to examine trends in Navy and Marine Corps aviation readiness
· Developed time series (ARIMA) models to forecast F/A-18 mission capable/availability rates
· Analyzed impacts of missile attacks on targets of interest using both deterministic and stochastic models
· Managed database (300GB+) of DoD personnel, equipment, operations, and force structure across all four Services. Used SQL and R to automate the regular ingestion and cleaning of multiple data sets

Analytic Services Inc.   February 2016 - July 2017
Technical Analyst   *Falls Church, VA*

· Developed a statistical-based optimization model to evaluate the strategic deployment of sensor technologies along the southern border. Used model to assess border security effectiveness in hypothetical scenarios such as changes in migrant flow, location, or group size
· Analyzed U.S. Geological Survey elevation data in geographic information system (GIS) software to characterize the southern border by its terrain ruggedness.
· Developed a statistical methodology based on multiple systems estimation (MSE) to estimate the prevalence of human trafficking within the U.S.
· Performed simulations of MSE using notional data to test prototype methodology.

- Created map visualizations in GIS software to display population density and violent crime rate per county using U.S. Census Bureau and FBI Uniform Crime Reporting data
- Managed company's internal Microsoft SQL Server database on government spending
- Developed dashboards and applications in R/Tableau for analysis of government spending data
- Developed past performance database for business development
- Developed and presented training courses on topics such as data visualization and Matlab

EDUCATION

Georgetown University, Washington DC   August 2017 - December 2017
Certificate in Data Science

University of Iowa, Iowa City, IA   August 2013 - January 2016
M.S. in Mathematics

Relevant Coursework: Numerical Analysis, Ordinary & Partial Differential Equations, High Performance and Parallel Computing, Digital Image Processing, Advanced Digital Image Processing, Computational Intelligence, Pattern Recognition, and Optimization
GPA: 3.52

Fitchburg State University, Fitchburg, MA   August 2008 - May 2012
B.S. in Mathematics
Minor in International Relations

Relevant Coursework: Calculus (I, II, III, IV), Linear Algebra, Computer Science, Probability and Statistics, Microeconomics, Macroeconomics, Methods of Applied Math, and Advanced Multivariate Calculus
GPA: 3.94

PUBLICATIONS

Beam, C.W., J. Chang, N. Kallfa, and N. Minogue, 2016: Development of a Methodology for Determining Human Trafficking Prevalence. Prepared for Science and Technology Directorate, Department of Homeland Security. Prepared by the Homeland Security Institute, Falls Church, VA. HSSAI Report No. RP 15- 02.02-03. 91 pp.

Chang, J., S. Calkins, D. McGarvey, N. Kallfa, L. Nguyen, M. Roberts-Lahti, and P. Keller, 2016: Strategic Sampling Framework for Surveillance Mission Needs Analysis. Prepared for U.S. Customs and Border Protection, Department of Homeland Security. Prepared by the Homeland Security Institute, Falls Church, VA. HSSAI Report No. RP 14-14-03. 136 pp.

AWARDS, SKILLS, & CERTIFICATIONS

Awards: Analytic Services Inc. 2016 Semi-Annual Excellence Award, Fitchburg State University Mathematics Department Scholarship Award, Fitchburg State Dean's List (each semester 2008 - 2012)

Technical Skills: R, Python, Microsoft SQL Server, Elasticsearch, Kibana, Amazon Web Services, Matlab, Tableau, PostgreSQL, MySQL, AMPL, Latex, Access

Certifications: Elasticsearch Certified Engineer