# Senior Software Engineer

I build analytic APIs for data science, machine learning, and decision support. My passion is understanding an analytic pipeline, from the broad context down to the smallest details, so I can create cloud software products to make it more accessible, repeatable, and interpretable.

# Experience

## Senior Software Engineer, Intel Corporation Hillsboro, OR – 2014-present

Lead backend software engineer for an end-to-end machine learning platform for wearable and IoT devices. Responsible for designing and implementing the core technologies of a cloud-based service (SaaS), operationalizing data science and machine learning algorithms, interacting with stakeholders, and collaborating cross-functionally with algorithm engineers, firmware engineers, and business leaders.

* Design, implement, and provide timely delivery of software products using Agile methodologies
* Over 8 years of experience creating and shipping innovative, data-driven, web-based applications with Python, Django, and PostgreSQL
* Translate machine learning workflows, involving high-volume, real-time data processing, into extensible, generic, reliable software features
* Algorithm development for signal transformation, segmentation, feature extraction, model generation and selection, and hyperparameter optimization
* Communicate system and application designs to technical and non-technical peers, both verbally and in writing
* Evaluate open source libraries, frameworks, and APIs, and propose integrations and extensions
* Experience collaborating on a wide variety of multi-disciplinary engineering, scientific, and research teams
* Served as scrum master for a team of 10+ peers, removing obstacles, coaching junior developers, and promoting a culture of teamwork and trust
* Led demonstrations and training sessions with customers
* Take initiative to propose ideas and take technical ownership
* Possess exemplary organizational skills, ability to balance multiple projects with changing priorities
* Skill eliciting requirements and use cases
* Rapid prototyping, research & development
* Comfortable with inner workings of Machine Learning from both the theoretical and practical side
* Designed querying and results caching features that improved execution time for long running ML pipelines by 500%
* Enabled parameter optimization and fast algorithm development for end users
* Developed processes to scale up and out, keeping resources clean and operationally efficient on AWS hosted cloud service (EC2, RDS, S3, ElasticCache)
* Multiple performance excellence awards for consistent outstanding quality, results, and customer orientation

## Software & Database Developer, ECONorthwest Portland, OR – 2008-2014

Lead software developer, analyst, and project manager for an economics consulting company. Led in all areas of the software development life cycle – requirements engineering, implementation, testing and debugging, deployment, and maintenance. Developed a longitudinal data warehouse for education research and extracted and analyzed data sets for public policy reports.

* Responsible for managing and shipping commercial decision support SaaS applications with thousands of unique monthly users
* Experience defining and documenting business, data, and software requirements
* Developed a longitudinal data warehouse for education research and extracted and analyzed data sets for policy reports
* Used statistics, data mining, clustering, and other data analysis techniques to collect, explore, and extract insights from structured and unstructured data
* Applied expertise in data management, web application development, and data analysis to projects in education, program evaluation, and disability and veterans’ benefits, using a wide range of open-source tools such as Python/Django, PostgreSQL, R, and SVN/Git
* Grew software product line (subscription and revenue) by 350% over six years through effective project management and technical execution
* Produced a high-impact analysis of chronic absenteeism in Oregon schools that influenced changes in the state’s K-12 academic accountability system

## Research Assistant, Oregon Health & Science University Portland, OR – 2005-2008

Scientific programmer analyst for clinical research studies in movement disorders, chronic pain, and Alzheimer's disease.

* Investigated and recommended analytic methods and wrote scripts for data processing and analysis (MATLAB, IDL, LabVIEW, SQL)
* Produced data visualizations for grant applications, manuscripts, and national conference presentations
* Coordinated patient visits, MRI scans, and IRB correspondence and compliance for research studies with over 100 enrolled subjects

## Web Developer Freelance – 1999-2008

Developed websites and web-based applications for numerous clients (HTML/DHTML, CSS, JavaScript, ASP, PHP, SQL, AJAX, Flash)

* Ten years of experience hand-coding web markup and scripting languages
* Created and managed large database-driven sites (100+ pages)
* Worked with a wide variety of web technologies, such as e-merchant and content management systems (Wordpress)
* Acquired and retained long-term customers by demonstrating professionalism, attention to quality, and excellent project management and communication skills

## Machine Learning Intern, Zoological Society of London London, UK – 2001

Collaborated with scientists to develop a classification software tool using traditional statistical modeling and neural network modeling techniques (MATLAB)

* Programmed routines for data pre-processing, normalization, and dimensionality reduction
* Performed multivariate statistical analyses such as discriminant function analysis and principal components & factor analysis
* Implemented feed-forward MLP and RBF neural networks with a regularized gradient descent training algorithm and applied cross-validation techniques
* Summarized and presented results to team

# Education

## Graduate Certificate, Biomedical Informatics Portland, OR – 2013

Oregon Health & Science University

## Master of Science, Neural Networks London, UK – 2001

King’s College London, awarded with Merit

## Bachelor of Arts, Mathematics Oberlin, OH – 2000

Oberlin College, 3.8 GPA

Minor in Computer Science

# Awards, Publications, and Presentations

* Presented software demonstrations at Intel Developer Forum SF 2016
* Presented analysis of chronic absenteeism in Oregon to a 2013 education research symposium
* Member of the Association for Computing Machinery since 2013
* Coauthored articles published in *Experimental Brain Research* (2010) and *Neuroscience Letters* (2009)
* Member of the Sigma Xi Scientific Research Society since 2000
* Coauthored article on Dynamic Programming published in *The UMAP Journal* (2000)

# Skills

# Programming Languages: Python, SQL, R, MATLAB, PHP, HTML, CSS, Java

# Python Data Science Libraries: Scipy, Numpy, Pandas, Scikit-learn, Matplotlib

# Databases: PostgreSQL, MySQL, Teradata, Access

# Web Frameworks & Services: Django, Spark, AWS (EC2, RDS, S3, ElasticCache), Celery, Redis

# Data Science: Statistics, Machine Learning, Operations Research, Decision Analysis, Image Processing