Patrick Violette

LOCATION Austin, TX   **EMAIL** violette.patrick718@gmail.com   **BLOG** uvio.bio   **TWITTER** @itspviolette   **LINKEDIN**

Skills

Languages: C/C++, Python, BASH, JavaScript/TypeScript/HTML/CSS, SQL, Java, Go
Tools: TensorFlow, Jupyter, Clang, Perf, D3, React, Unix commands, AWS, LaTeX
Interests: Computing meets biotech. AI, Machine learning, software engineering, data pipelines.

Education

UC San Diego (Online via Coursera) (Ongoing, texbook completed)   MAR 2020 - Present
BIOINFORMATICS SPECIALIZATION

Implemented all coding problems in Compeau and Pevzner's Bioinformatics Algorithms: An Active Learning Approach. Notable topics: genome sequencing, mass spectrometry, phylogenies, string algorithms (BWT, BLAST, MSAs), HMM variant detection/clustering.

Georgia Institute Of Technology   AUG 2012 - DEC 2015
COLLEGE OF COMPUTING, BS IN COMPUTER SCIENCE. GPA: 3.96

Notable courses: Natural Language Processing, Probability and Statistics, Honors Algorithms, Emerging Database Technologies, Computer Networking, User Interface Design, Computational Photography, Operating Systems, Spanish

Georgia Institute Of Technology   AUG 2013 - MAY 2015
IVAN ALLEN COLLEGE OF BUSINESS, MINOR IN BUSINESS WITH DENNING TECHNOLOGY AND MANAGEMENT

Took cross-discipline courses (Process Engineering, Emerging Technologies, Marketing, Accounting) and leadership training. Culminated in capstone project: an ML-powered, customer review analysis tool for Home Depot, parsing and visualizing customer reviews at the product and catalog levels.

Experience

Senior Software Engineer   FEB 2016 - AUG 2021
GOOGLE, SPEECH RECOGNITION (HOTWORD, WAKE-WORD)

Worked cross-functionally as a software engineer/researcher for the "Hey, Google" team, supporting product needs for voice-first interactions on smart speakers, displays, and Android phones. Deep collaborations among core hotword quality, data science, data operations, product management, integration teams, and many more. Among others, delivered:

- Novel Research: SVDF hotword models (patent), maxpooling loss function, multichannel hotword models.
- Streamlined Data Pipelines: Optimized TensorFlow training, evaluation pipelines, and i18n data collection and quality control.
- Actionable Product metrics: Owned hotword live-experiment metrics (quality, reliability) for Google Home and Android users.
- Quick, Cheap Embedded Inference: Exported models for both TFLite-on-CPU and DSP (hifi, wolfson).

Software Engineer Intern   SUMMER 2015
GOOGLE, TEST AUTOMATION PROJECT

Implemented a neural network to schedule likely-to-fail tests early in continuous-integration test batches.

Software Engineer Intern   SUMMER 2014
FACEBOOK, ATLAS ADS

Implemented ad management features (ad preview, bulk operations) in React.js for the Atlas Ad manager UI. Collaborated on a hackathon project to create a panorama viewer (co-author on patent).

Projects

uvio.bio Blog   JAN 2021 - Present
BIOLOGY, BIOINFORMATICS, MACHINE LEARNING BLOG

Writing about biology and machine learning topics of interest, such AlphaFold (e.g. AlphaFold architecture and AlphaFold predictions), biology thought experiments (e.g. on viral-burst feedback loops, on mutation rates, on biology of bread making), and biohacking experiments (e.g. GFP bacteria).

Chat Bots   2016-2017
PYTHON, TENSORFLOW, LANGUAGE MODELS, REACT, PYTHON WEB CRAWLING, RASPBERRY PI, BASH, FACEBOOK

Trained LSTM Char-LMs to caption bay area sunsets ("Time is how you spend your heart.") and mimic Dr. House.