Kevin Yang

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Key Skills

• Machine Learning • Deep Learning • Bayesian Modeling • Computer Vision • Strong Progrmaming Skills • Predictive Modeling • Benchmarking • Model Training • Data Structures • Data Cleaning • Data Visualization • Cloud Computing • Team Collaboration

Technical Skills

- **Tools:** Python, R, SQL, Java, C++, Linux, Git, SLURM, Azure, Jupyter Notebook, Vim, PyQt
- **Packages:** PyTorch, NumPy, pandas, matplotlib, seaborn, NumPyro, PyMC, scikit-learn
- **Statistics/Machine Learning:** Bayesian Modeling, Statistical Modeling, Computer Vision, Deep Learning, Regression, Clustering and Classification

Experience

BC Cancer
Jan. 2021 – Present

Master's Student, Supervisor: Dr. Andrew Roth — *Vancouver, BC*

Model Development & Implementation

- Infer cancer population structure for a Master's thesis by designing and building Bayesian models, achieving an error rate 75% lower than state-of-the-art methods
- Reconstruct images for spatial tissue analysis by developing deep learning models reducing validation loss by over 60%
- Scaling machine learning models by optimizing data representation and doing research for more efficient algorithms

Analysis Pipeline Design & Cloud Computing

- Produce bench testing experiments using workflow managers and HPC clusters to gain over an order of magnitude speed up
- Operate Azure to store and load over 1TB of sensitive patient data

Team Collaboration & Data Visualization

- Collaborate with a team of over 10 people from two countries for deploying bioinformatic analyses to the cloud
- Generate over 5 publication quality plots and figures for a preprint

University of British Columbia
Sep. 2019 – Aug. 2020

Undergraduate TA (CPSC 221: Basic Algorithms and Data Structures) — *Vancouver, BC*

Communication & Leadership

- Facilitated weekly lab sessions of 25-30 students by working through coding exercises in C++
- Provided assistance with coding assignments and exam prep during weekly office hours for up to 50 students

Internship

Statistics Canada
Jan. 2019 – Aug. 2019

Application Developer — *Ottawa, ON*

Full Stack Development

- Stored, managed and visualized Property Value data by writing 10+ SQL stored procedures
- Designed unit tests with the Visual Studio Unit Testing Framework obtaining over 80% function coverage
- Worked alongside a small group of 4-5 senior developers to accomplish time-sensitive projects

Education

University of British Columbia
Jan. 2021 – Present

MSc. Bioinformatics - GPA: 4.0/4.0 — *Vancouver, BC*

University of British Columbia
Sep. 2015 – Dec. 2020

BSc. Computer Science and Statistics - GPA: 3.9/4.0 — *Vancouver, BC*

Projects

LiquidBayes

- Implementing a machine learning model to infer cancer population structure using Bayesian inference techniques

stpt2imc

- Building a deep learning model using PyTorch to reconstruct IMC images from STPT images

Regression App

- Created a GUI Application to perform 6 different types of regressions on user inputted datasets

MethylationDPGMM

- Augmented a machine learning clustering algorithm to jointly analyze genomic features by constructing and integrating an R package to wrangle data from an online cloud data source, decreasing memory usage by over 75%