Kevin Yang

3940 Lockhart Road, Richmond, BC V7C 1M3
604-710-7454 kevinyang10@gmail.com https://www.linkedin.com/in/kevin-yang-72020b166
https://github.com/keviny2

Education

University of British Columbia **Jan. 2021 – Present**
MSc. Bioinformatics *Vancouver, BC*

University of British Columbia **Sep. 2015 – Dec. 2020**
BSc. Computer Science and Statistics - Distinction *Vancouver, BC*

Research Experience

BC Cancer **Jan. 2021 – Present**
Graduate Student *Vancouver, BC*

- Supervisors: Andrew Roth, Yongjin Park
- Cascadia Project
  - Developing a computational statistical model to integrate scWGS and ctDNA WGS to deconvolve the clonal prevelance in longitudinal ctDNA samples
- IMAXT Project
  - Implementing a deep learning model to reconstruct Imaging Mass Cytometry (IMC) data from Serial Two-Photon Tomography (STPT) as input

BC Cancer **Sep. 2020 – Dec. 2020**
Directed Studies Research Student *Vancouver, BC*

- Augmented a Dirichlet Process Gaussian Mixture Model to jointly analyze DNA methylation and RNA expression data from multiple cancer types for clustering
- Created a custom R package 'methylationfun' containing functions to preprocess raw DNA methylation data from ICGC

BC Cancer **May 2020 – Aug. 2020**
Undergraduate Research Student *Vancouver, BC*

- Helped develop a generative model based on the non-parametric Bayesian Indian Buffet Process to analyze gene expression data from multiple cancer types
- Implemented MCMC inference procedures and the Geweke Test in Python
- Vectorized with NumPy and parallelized with Snakemake

Work Experience

University of British Columbia **Sep. 2019 – Aug. 2020**
Undergraduate TA (CPSC 221: Basic Algorithms and Data Structures) *Vancouver, BC*

- Communicated concepts about basic data structures and algorithms
- Facilitated weekly lab sessions of 25-30 students
- Answered questions through Piazza and marked up to 200 assignments using Gradescope

Statistics Canada **Jan. 2019 – Aug. 2019**
Application Developer *Ottawa, ON*

- Developed a website application using MVC architecture in C# to store, manage, and visualize Property Value data
- Constructed interactive Web pages using HTML, CSS, JavaScript, Ajax, jQuery, and Bootstrap
- Converted PL/SQL procedures to SQL stored procedures for a web scraping program
- Designed extensive unit tests with Visual Studio Unit Testing Framework

Presentations

CAIDA **Nov. 2020**
Bayesian Non-Parametric Model for Pan-Cancer Analysis *Poster Presentation*

- Presented on a Bayesian non-parametric model to learn a latent structure in cancers of different tissue types reflecting commonly altered gene pathways during the poster session.
- Demonstrated effectiveness of the model by showing results on a publicly available data set from the International Cancer Genome Consortium

Conferences

- Canadian Cancer Research Conference 2021
- RECOMB 2021
- Cancer Grand Challenge 2021
- CAIDA 2020
- BIG22

Projects

Non-Bayesian vs. Bayesian HMMs | *Python, PyCharm* **Jan. 2021**

- Compared performance of the well-known Baum-Welch algorithm to a Gibbs sampler for HMMs
- NumBa to speed up inference procedure

DGE of Pseudomonas aeruginosa | *R, Rmarkdown* **Jan. 2021**

- Analyzed gene expression data of Pseudomonas aeruginosa during LUZ19 phage infection in different growth media (MCCM and LB)
- Used limma-voom for statistical analysis and KEGG for gene interpretation

Analysis of Heat on Grapevine Quality | *R, RStudio, Rmarkdown* **Jan. 2020**

- Provided Statistical Consulting for a faculty member of UBC Biology
- Conducted an ANOVA to determine the efficacy of novel agro-thermal heat-treatment technologies in grapevine yield

Regression Application | *Python, PyQt5* **Jun. 2019**

- Developed an application to perform various types of regressions (Linear, Logistic, Lasso, ElasticNet, etc.) in Python using PyQt5 software
- Statistical analysis using pandas, NumPy and sklearn
- Data visualization with matplotlib and seaborn

Technical Skills

Languages: Python, R, C, C++, C#, Java, SQL, JavaScript
Developer Tools: PyCharm, RStudio, VS Code, Vim
Technologies/Frameworks: Linux, Git, LaTeX