Sriram J. Hathwar

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Education

Princeton University, B.S.E. Operations Research, 3.7 GPA 2018 – June 2022

- Minors in Statistics + Machine Learning, Quantitative + Computational Biology
- Relevant coursework: Algorithms and Data Structures, Protein Folding, fMRI Decoding, Probability and Stochastic Systems, Analysis of Big Data, Statistical Genomics, Computational Biology, Drug Discovery, Organic Chemistry I and II, Biochemistry, Biophysics, Optimization for the Life Sciences

Experience

Bioinformatics Research Assistant, WashU School of Medicine Summer 2021

- Train diffusion maps and graphical neural networks on single-cell RNA-seq data from a human embryo and gastruloid to model germ layer formation
- Discovered potential heterogeneity in mesoderm formation, intend to deploy model for public use and confirm results experimentally

AI + Healthcare Course Lead Instructor, Inspirit AI 2020 – Present

- Teach high school students about applications of cutting edge AI techniques like graphical neural networks and transformers to healthcare
- Explain math and theory behind various machine learning models including logistic regressions, neural networks, CNNs, RNNs, and LSTMs
- Guide students throgh Jupyter notebook projects in Python including seizure prediction, skin cancer detection, mental health chatbots, and drug discovery

Computational Neuroscience Research Assistant, Seung Lab 2020 – 2021

- Used k-means clustering as baseline model to cluster neuronal types in mice
- Applied literature algorithms like time-inhomogeneous diffusion condensation to compare clustering outcomes with baseline model

Chief Executive Officer and Co-Founder, Angle Global 2019-2021

- Signed licensing contract to be exclusive distributor of English learning content to the 5 million participants of the Spelling Bee of China
- Earned $30,000 grant to work on company over summer 2020 through Ovo Fund
- Selected for Neo Hack Month and advanced to final interview stage for YC S20

Projects

Integrated Latent Variable Model for Lapses in Rodent Decision-Making

- Working under Princeton Professor Jonathan Pillow to model mice decision-making in sensory analysis experiments for senior thesis
- Exploring an integrated approach using reinforcement learning and Hidden Markov models to model stimulus-independent error rates in rodent perception tasks

Replicating Large Scale Multi-Omic Analysis of COVID-19 Severity

- Led undergraduate team to reproduce published results analyzing metabolites, proteins, transcripts, and lipids from COVID-19 patient blood samples
- Wrote SQLite queries to access patient data from distinct tables and performed standard dimensionality reduction techniques like PCA for further analysis
- Developed random forest machine learning model to predict patient COVID-19 status and severity based on multi-omic dataset from Overmyer et. al (2020)

Skills

Python, R, SQL, Java, Scala, Machine Learning, Photoshop, Illustrator, InDesign