DANIEL LIU

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Education

Rutgers University   Expected Graduation: May 2023
Master's in Data Science

Rutgers University Honors College   Graduation: May 2022
Bachelor of Science in Bioinformatics | Minor in Computer Science   *GPA: 3.9/4.0*

Professional Experience

Bromberg Lab   New Brunswick, NJ
Undergraduate Researcher   *February 2021- February 2022*
- Implemented a RNN model capable of next character prediction in virus DNA for transfer learning
- Strategically assess how genomic data can be leveraged in downstream transfer learning tasks
- Conduct literature searches for relevant computational methods and applications in biology

WINLAB   New Brunswick, NJ
Machine Learning Researcher   *June 2021- August 2021*
- Constructed a dual-input CNN model capable of identifying individuals with 60% accuracy using Wi-Fi data
- Learned concepts behind Wi-Fi channel state information (CSI) and opportunities for application with ML
- Worked collaboratively with graduate students to develop and present a deep learning model

Admera Health   South Plainfield, NJ
Bioinformatics Intern   *January 2020 - March 2021*
- Developed a web scraper to compile metadata on thousands of genes and decrease lookup time by 98%
- Worked closely with human genomic data generated by the company's pharmacogenetic (PGx) panel

Projects

Mahjong Tile Computer Vision Model
June 2022
- Trained an object detection model utilizing Yolov5 model architecture to detect mahjong tiles in an image
- Deployed the model on a Streamlit data app for ease of use

Mobile User Authentication Using Wi-Fi Data
August 2021
- Designed a CNN model using time and frequency domain plots of Wi-Fi channel state information to predict user identity and current activity (sitting, squatting, walking)
- Achieved 70% activity recognition and 60% user recognition on a dataset of 5 users and 3 activities

Virus Genome Language Model   *February 2021- Present*
- Retrieved and curated public genome data for use in language model training
- Designed a language model based on LSTM architecture for next nucleotide prediction in viral DNA
- Leveraged the trained model in classification tasks and achieved 87% accuracy in identifying virus DNA

Leadership and Activities

Chinese Christian Fellowship   New Brunswick, NJ
Large Group Coordinator   *September 2019 – Present*
- Direct a team of student leaders to organize weekly large group meetings with 40+ regular attendees
- Coordinate logistics of renting room space and transporting necessary equipment to large group meetings

Skills

Technical Skills: Python, Jupyter Notebook, SQL (mySQL), Linux (command line), Java, Microsoft Office
Libraries (Python): Tensorflow, fastai, pandas, NumPy, Matplotlib, csv, Conda