Prannav Shankar

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EDUCATION

Duke University   Durham, NC
Biomedical Engineering (B.S.E) and Computer Science (B.S)   *August 2022 – December 2025*
- GPA: 3.812 (Dean's List with Distinction)
- Relevant Coursework: Math 218: Linear Algebra, Math 219: Multivariable Calculus, Math 353: Differential Equations, CS 201: Data Structures and Algorithms, CS 216: Everything Data, CS 250: Computer Architecture, ECE 110: Fundamentals of Electrical and Computer Engineering, BME 244: Quantatative Physiology and Biostats

EXPERIENCE

Machine Learning Engineer   Sep. 2023 – Present
Duke University (MIT CSAIL and Princeton)   *Durham, NC*
- Designed and incorporated method of using Princeton's GASTON to create a directed acyclic graph (DAG) based on high-dimensional cell location and expression data
- Reduced runtime of KNN model creation for multiple levels of k from $O(N^2)$ to $O(N)$ and implemented method for determining KNN neighbor accuracy
- Created method in Velorama that allows for command line creation of DAGs given high-dimensional datasets
- Designed, developed, and tested tools for data analysis on completed DAG runs that relays important results
- Kept documentation of results in an experimental document and a spreadsheet of corresponding data

ML and AI Intern   Jul. 2023 – Aug. 2023
SureStart & MIT   *Remote*
- Created and implemented convolutional neural networks (CNNs), multilayer perceptrons (MLPs), and other deep learning models in TensorFlow
- Served as full stack developer on Perspectify, which takes current events, summarizes major points, and recommends articles with alternative viewpoints
- Incorporated OpenAI API and Google API to pull information through Django back-end

PROJECTS

GASTON + Velorama | *Python, Jupyter Notebooks*   Jan. 2024 – Present
- Implemented machine learning tools for extracting information from a cell dataset and creating a DAG
- Improved runtime of machine learning process by incorporating gradient clipping and learning rate scheduling
- Designed tools that allow for ADATA splicing to test data subsets, as well as tools for data analysis within a run and across two runs for variable comparison

Gmail Diary | *Python, SQL*   Jan. 2024 – Feb. 2024
- Implemented program that sends daily emails asking for user ratings on a variety of factors using Gmail API
- Extracts information from reply to email and stores in database using Gmail API and SQL
- Uses stored data to calculate summary statistics and send a weekly summary email to the user about their week

Personal Website | *HTML/CSS, JavaScript*   Jan. 2024 – Feb. 2024
- Designed and built personal portfolio site using HTML/CSS and JavaScript, highlighting skills and projects
- Implemented desktop and mobile phone compatibility, with collapsible hamburger menu

Perspectify | *Python, Django, HTML/CSS*   Aug. 2023 – Sep. 2023
- Developed a full-stack web application using Django serving OpenAI and Google API with HTML/CSS front-end
- Implemented BeautifulSoup4 to scrape text from web articles and feed text to OpenAI API
- Implemented OpenAI API to clearly and concisely summarize articles and feed search terms to Google API
- Used Google API to query related articles and provide up to 10 additional links for further research

SKILLS AND INTERESTS

Languages: Java, Python, C, JavaScript, HTML, CSS, SQL, MATLAB
Frameworks and Libraries: Django, PyTorch, TensorFlow, Numpy, Pandas, Keras, SQLite
Interests: Working Out, Tennis, Basketball, Cooking, Drone Photography, Hiking, Hip-Hop, Rubik's Cubing