

# Prannav Shankar

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## EDUCATION

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### Duke University

Durham, NC

*Biomedical Engineering (B.S.E) and Computer Science (B.S)*

*August 2022 – May 2026*

- GPA: 3.89 (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, Phys 152: Electricity and Magnetism

## EXPERIENCE

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### Machine Learning Researcher

Sep. 2023 – Present

*Duke University*

*Durham, NC*

- Working on implementation of Velorama, a gene regulatory network inference tool that uses RNA velocity to reveal causal links between transcription factors and their target genes
- Design of graph neural networks and optimal learning through PyTorch for analyzing multimodal single-cell data

### ML and AI Intern

Jul. 2023 – Aug. 2023

*SureStart MIT FutureMakers*

*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

### BluePrism Automation Intern

Jul. 2021 – Aug. 2021

*Lateetud*

*Remote*

- Completed BluePrism training protocol
- Designed BluePrism protocol for automating project feasibility analysis
- Implemented method of extracting information from an Excel Questionnaire
- Implemented method of computing statistics based on the stored data, then emailing summary to target user
- Presented final product to company CEO and board at end of summer

## PROJECTS

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### Gmail Diary | *Python, SQL*

Jan. 2024 – Present

- 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

### 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 additional links for further research

### Sentiment and AQI Correlation | *Python, Numpy, Pandas, Seaborn, Textblob*

Jan. 2023 – May 2023

- Conducted correlational analysis on climate conditions and sentiment in tweets
- Used Pandas and Numpy to extract locational data from Tweet database
- Indexed relative locations in an AQI database with levels of CO2, NO2 and SO2
- Calculated sentiment value of Tweet using Textblob and plotted correlation with AQI using Seaborn

## SKILLS AND INTERESTS

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**Computer:** Java, Python, HTML/CSS, SQL, MATLAB, Django, PyTorch, TensorFlow, Numpy, Pandas, Keras

**Lab:** Western Blot, qPCR, Cell Staining, Gram stains, DNA Fingerprinting, DNA Isolation, RNA MiniPrep

**Interests:** Working Out, Tennis, Basketball, Cooking, Drone Photography, Hiking, Hip-Hop, Rubik's Cubing