Pranav Vijayananth

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Education

Purdue University West Lafayette, Indiana

Bachelor of Science in Computer Science, Data Science *Aug. 2023 – May 2026*

- Concentration: Data Science, Machine Learning, and Artificial Intelligence
- Relevant Coursework: Problem Solving and Object-Oriented Programming, Multivariable Calculus, Python Programming, Discrete Mathematics, Programming in C, Linear Algebra, Data Structures and Algorithms, Computer Architecture, Introduction to Data Science in Python, Statistics for Data Science, Probability, Analysis of Algorithms, Statistical Theory, Data Visualizations

Experience

Software Engineering Intern May 2024 – December 2024

Impel *Syracuse, NY*

- Worked on the L3 Support Team to create scripts to implement feature highlights, 360 spin walkarounds, and SRP banners, onto clients' websites using **jQuery** and **JavaScript**
- Created a **Python**-based linter integrated with **UglifyJS** to detect code errors, vulnerabilities, and stylistic issues, increasing code quality by 30%
- Deployed a feature tour library for the New Zealand locale clients and ran automation tests through **Jenkins**

Machine Learning Research Intern December 2022 – May 2023

New Jersey Institute of Technology *Newark, NJ*

- Studied the dilemma of consistency and determinism in AI by researching **SOM models** and received a **$400,000** three-year grant from the NSF
- Built complex SOM systems using **Tensorflow** and **Keras** while leveraging **Nvidia's cuDNN** to improve clustering accuracy standard deviation to 0.08
- Illustrated u-matricies using **matplotlib** and **sklearn** to visualize neighborhood distance and BMU locations to reveal distortion at 4.36

Projects

PraesidioUV | *React Native, Flask* January 2023 – February 2023

- Created a UV-based clothing recommendation app using **RAG techniques**, earning 3rd place at the Eco-IT Biohackathon
- Built a **Flask RESTful API** to fetch customer UV index data from **Firebase** and call a content-based and collaborative filtering recommender system; returned personalized recommendations with 0.85 precision and 20% lower MSE
- Implemented a geofencing feature with **TypeScript** and **React Native Expo** to provide real-time location updates, enhancing user engagement by 25% through precise location-based data

Autonomous Robotics System | *Java, C++, Python, OpenCV, WPILib* March 2023 - August 2023

- Led development of RoboRIO code as Project Manager for Team 2554's Infinite Recharge robot, achieving a **top 20** placement at Brunswick Eruption
- Designed and implemented a vision target tracking system using **Raspberry Pi** and **OpenCV-Python**, featuring latency-compensated closed-loop control to enhance tracking precision by 20%
- Integrated trajectory planning and motion control using the **WPILib Trajectory pipeline**, achieving a 25% improvement in path accuracy and reducing execution time for trajectory movements by 15%
- Developed an automatic control panel and integrated encoder-equipped motor manipulation using **Java** and **C++**, reducing manual operation time by 30%

Technical Skills

Languages: Java, Python, C/C++, SQL (Postgres), JavaScript, HTML/CSS, R
Frameworks: React, Node.js, Flask, Django, React, Next.js, FastAPI, MongoDB
Developer Tools: Git, Docker, TravisCI, Visual Studio, PyCharm, Postman, DBeaver, Jenkins, AWS, Jira
Libraries: Pandas, NumPy, Matplotlib, Tensorflow, Keras, SciPy, Plotly, OpenCV, scikit-learn, seaborn, PyTorch
Platforms: Unix/Linux, MacOS, Windows
Interests: DJing, Audio mixing, Weightlifting, Volleyball, Basketball