Pranaav Venkatasubramanian

www.pranaav.dev | pranaav.venkat04@gmail.com | github.com/pranaavvenkat04| linkedin.com/in/pranaav-venkat

Education

New York Institute of Technology May 2025
Bachelor of Science in Computer Science, Minor in Mathematics (GPA: 3.96) *Old Westbury, New York*

Experience

Entrepreneurship and Technology Innovation Center Nov 2022 – Present
ETIC Project Manager (Promoted from ETIC Intern) *Old Westbury, New York*

- Key contributor to ETIC's first-ever AI system development, implementing machine learning models to analyze medical research data and extract actionable insights to accelerate genome study for researchers
- Successfully delivered 10 high-end NASA patented prototypes under contract with NASA's Technology Transfer Office, maintaining 100% project completion rate despite complex technical requirements
- Project managed teams of 3-5 multi-disciplinary engineers across multiple concurrent projects, establishing clear timelines, efficient task delegation, and effective progress tracking systems that improved project delivery times
- Designed and implemented software solutions for 20+ technical projects spanning healthcare, energy, aerospace, manufacturing, education, robotics, and AI, with extensive documentation for knowledge transfer

Apple Jan 2024 – Dec 2024
Pathways Alliance Pathfinder *Remote*

- Selected as one of only 2 candidates from NYIT for Apple's exclusive mentorship program, gaining direct exposure to industry-leading development practices and technical expertise within Apple's technology ecosystem
- Participated in specialized technical workshops and networking opportunities with Apple professionals, strengthening my understanding of product development cycles and technical implementation strategies

NYIT Student Government Association May 2024 – Present
Treasurer *Old Westbury, New York*

- Manage and oversee budget allocations for student organizations across campus, implementing transparent financial tracking systems to optimize resource utilization and ensure accountability
- Develop comprehensive financial reports and presentations for executive board and general assembly meetings, providing data-driven insights for strategic decision-making
- Collaborate with student leaders across campus through committee representation, helping to align organizational funding priorities with student body needs and university objectives

Technical Skills

Programming Languages: Python | Java | C# | C++ | C | JavaScript | TypeScript | SQL | Git
Web & UI Development: HTML | CSS | TailwindCSS | React | ASP.NET | Blazor | Firebase
Embedded Systems: Raspberry Pi | Linux | Sensor Integration | Signal Processing
AI & Data: TensorFlow | PyTorch | Data Analysis | Image Recognition
Databases & Cloud: MySQL | MSSQL | Pyodbc | Azure | Database Design

NASA Projects

RENCAT (Remote, Noninvasive, Cardiac Activity Tracer) | *Python, Raspberry Pi, Linux*

- A NASA Prototype that utilizes a novel laser vibrometer sensor for monitoring cardiac activities remotely and non-invasively, specifically heart functions of valve/chamber opening and closing cycles (cardiac cycles)
- Designed software that analyzes and filters the readings from an interferometer and developed a program that uses cardiac data to mimic a heartbeat on a speaker
- U.S. Patent Number: 11,119,072 | TOPS Document: LAR-TOPS-315

Variable Visibility Glasses | *Python, Raspberry Pi, Linux*

- NASA developed and tested special glasses that uses novel sensors to determine head position, the glasses restrict the view out of the aircraft windscreen but allow the pilot to clearly see the entire instrument panel, providing a much more realistic low visibility instrument flying experience
- Developed software that connects the sensors to the glasses which hide/show depending on the orientation of the user's head and created a user interface mimicking a cockpit of an aircraft for demonstration purposes

- U.S. Patent Number: 8,411,214 | TOPS Document: LAR-TOPS-101

Space Suit RoboGlove (SSRG) | *Python, Embedded Systems, Sensor Integration, Signal Processing*
- Contributed to NASA's second-generation robotically assisted EVA glove that reduces astronaut hand fatigue and injury risk during complex space operations
- Developed the communication protocol between the glove's force-sensitive resistors, string potentiometers, and linear actuators, enabling real-time finger movement detection and 5 different assistive modes
- Implemented sensor data processing algorithms that accurately interpret user intent and translate it to precise tendon operations through the Bowden Cable system, ensuring responsive and natural finger assistance
- U.S. Patent Numbers: 10,888,487; 11,019,862; 11,690,775 | TOPS Document: MSC-TOPS-80

Personal Projects

AttendEase | *React*, *Firebase*, *TailwindCSS*, *Swift.js*
- Piloted the development of an attendance management system that utilizes NFC technology to check students into the course. Designed an attendance dashboard that shows instructors' students' attendance statistics, creating high-end reports notifying the instructor of absences and tardies
- iOS and Android apps were also developed to emit an NFC signal from the phone which they can scan to let students check into their lectures for ease of usability

Gamified Silk Screen Cleaner | *Python*, *Raspberry Pi*, *Linux*
- Placed 1st at the NYSID (New York State Industries for the Disabled) competition by providing a high-tech solution for cleaning plastisol ink from screen printing equipment, designed to assist workers with disabilities. The solution improved workplace efficiency by 40%
- Our team designed a device that gamifies the task of cleaning for people with Autism. I developed a game system, and the operating system to control a multi-motor and chemical-based system
- Video: https://www.youtube.com/watch?v=x-vOqySdoQI

Dragonfly Drone Software | *Python*, *TensorFlow*, *SQL*, *Pyodbc*
- Developed and optimized the Dragonfly drone software system using Python, integrating AI-powered image recognition and geolocation algorithms to enable autonomous navigation and precise delivery
- Engineered a comprehensive image database and recall mechanism, allowing the drone to accurately identify, store, and revisit specific locations. The use of artificial intelligence enhances the drone's ability to deliver packages, such as medicine or seeds, with high accuracy and reliability

XpressAssist | *ASP.NET*, *C#*, *HTML*, *CSS*, *JavaScript*, *MSSQL*
- Developed a web-based software solution that features a web-based clocking-in system for employees to view their workstation daily, with mobile notifications for managers and support workers
- Employees can also request assistance or notify about breaks, while managers receive weekly reports and use a data prediction model to gauge task engagement and potential communication challenges
- The solution was created for the NYSID CREATE Competition (2022-2023) to assist managers and support workers of people with Autism
- Video: https://www.youtube.com/watch?v=F3R-SXwZiIg

AzureADBlazor | *Blazor*, *C#*, *HTML*, *CSS*, *SQL*, *Azure AD*
- A web-based software application that allows patients to view pathology reports disclosing any illnesses or diseases after on-site testing
- Using Blazor Web Assembly for rapid website rendering, Azure Active Directory for authentication, and QuestPDF for generating PDFs from SQL database data

Awards and Certifications

Academic Awards: Undergraduate Computer Science Faculty Award, Presidential Honor's List (All Semesters), Presidential Scholarship (Highest Merit-based tuition award)
Competition Awards: 1st Place NYSID CREATE Competition (2024) for assistive technology innovation, Recognized participant in $(ISC)^2$ Hackathon (2023)
Technical Certifications: Harvard CS50x Computer Science Certification (2021), NASA T2X Certificate of Excellence for prototype development
Professional Development: NASA Assistive Technologies Startup Summit presenter, NYIT SOURCE (2024) presenter, NYIT Math Day (2024) presenter