Varun Vudathu

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Address: 425 Edgehill PL, Johns Creek, GA 30022

EDUCATION

Georgia Institute of Technology, Atlanta, GA *Cumulative GPA*: 3.95/4.00 | *Expected Graduation:* May 2026
- *College of Computing:* BS in Computer Science
- *Relevant Coursework:* Linear Algebra, Computer Networking, Data Structures and Algorithms, Computer Organization and Programming, Objects and Design, Intro to AI, Robotics and Perception, Machine Learning, Database Systems

Georgia Tech – Barcelona Computer Science Summer Program, Barcelona, Spain May 2023 – August 2023

PROFESSIONAL EXPERIENCE

Georgia Tech Research Institute, *Research Intern – Student Assistant, EOSL Lab,* Atlanta, GA May 2024 – Present
- Developed new algorithms and prototyped a cost-effective alternative to LiDAR using the Scheimpflug principle, leading to optimized multi-dimensional object capture
- Implemented a deep learning model with convolutional neural networks and Python, improving real-time object detection accuracy by 58%, while dynamically adjusting to camera focus planes
- Developed and optimized CUDA-based parallel computing algorithms using C, achieving a significant increase in performance for real-time image processing tasks and matrix multiplication in scientific simulations

Georgia Tech College of Computing, *Student Assistant – Cybersecurity,* Atlanta, GA1 August 2023 – May 2024
- Enhanced the development of an AI-driven Helpdesk Chatbot, reducing issue resolution time and mitigating cybersecurity vulnerabilities
- Automated ETL processes and developed algorithms for data structuring and vulnerability management using Python, resulting in 100% increase in efficiency
- Utilized agile development methodologies and CI/CD practices to ensure rapid iteration and deployment of new features and fixes, maintaining high standards of quality and reliability

Georgia Tech Research Institute, *SWE Intern, ATAS Lab,* Atlanta, GA June 2021 – July 2021
- Integrated Python frameworks (OpenCV, AprilTags) into a Raspberry Pi and Arduino, enhancing camera vision techniques, resulting in more precise movements in industry standard robotic arms
- Optimized arm movement through kinematic algorithms, improving AprilTags detection in the workplace

EXTRACURRICULARS

GT WebDev, *Team Member – Project Manager,* Atlanta, GA August 2022 – Present
- Successfully led and guided a team of five students in the collaborative creation of a dynamic full-stack web application, leveraging the power of the MERN stack, AI/ML models, and public APIs for enhanced functionality
- Mentored a team throughout a project's lifecycle, resulting in significant improvement in team productivity and project outcomes.

TiE Young Entrepreneurs, *COO of Boxed Water Initiative,* Atlanta, GA September 2020 - June 2021
- Led the Boxed Water Initiative as COO, driving efforts that reduced plastic bottle consumption by a predicted percent, contributing to global plastic pollution reduction
- Secured partnerships with Georgia Power and Wilheit Packaging, enhancing business objectives and learning processes, resulting in enormous growth in initiative impact

Big Data Big Impact, *Team Member,* Atlanta, GA August 2023 – Present
- Developed and trained a CNN-LSTM deep learning model using TensorFlow and scikit-learn, achieving prediction accuracy of 78% and reducing training time through hyperparameter tuning and optimized data preprocessing
- Mentored members on deep learning concepts and coding best practices, fostering a collaborative learning environment and strengthening the overall skill set of the team

GT Club Baseball, *Player – Statistician,* Atlanta, GA August 2022 – Present

PROJECTS

Music Mood Analyzer, *Personal Project,* Atlanta, GA Fall 2023
- Developed an application using Flask, Next.js, and TensorFlow that performs sentiment analysis on users' songs using collaborative filtering algorithms and NLP techniques, providing personalized song recommendations through integration with the Spotify API

Shareplay, *GT WebDev,* Atlanta, GA Fall 2022
- Engineered a Chrome extension using React.js, Firebase, and WebSockets that allows users to host watch parties and synchronize video playback in real-time, leveraging REST APIs for seamless integration and user authentication.

Smart Photo Management System, *GT WebDev,* Atlanta, GA Spring 2024
- Coordinated the end-to-end development of a photo management website utilizing Google Cloud, Next.js, and AWS S3, which automates photo organization by applying a CNN object detection model to generate labels and create a searchable database

SKILLS AND INTERESTS

Coding: Python, Java, C, JavaScript, HTML/CSS, Node.js, Android/iOS, SQL, Windows, Linux, Git, Agile, Scrum
Frameworks: React.js, Cuda, Firebase, MongoDB, GCP || **Language:** English, Telugu, Spanish