Ishan Voleti

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Education

Georgia Institute of Technology — Atlanta, GA
Bachelor's of Science in Computer Engineering — *Expected Graduation: May 2028*
- **Concentration:** Computing Hardware & Emerging Architectures and Distributed System & Software Design
- **GPA:** 4.0/4.0
- **Coursework:** Data Structures & Algorithms, Hardware/Software Systems Programming, Digital Logic & Design, Object-Oriented Programming, Linear Algebra, Differential Equations, Classical Mechanics & Physics

Experience

RoboJackets, RoboCup Division — Atlanta, GA
Firmware Engineer — *August 2025 – Present*
- Implemented pulsed signal processing in Rust to improve ball presence detection, reducing false positives by 95%
- Leveraged RTIC to schedule microsecond-precision tasks, ensuring <15μs actuation latency for peak kick power
- Calibrated motorboard MOSFET dead-time, mitigating current spikes by 25% and cutting energy usage by 50%

VEX Robotics — Malvern, PA
Team Lead — *Sept. 2019 – May 2025*
- Led team through engineering 3-4 robots annually securing top 10% ranking in States and Worlds qualification
- Developed advanced robotics mechanisms, including a custom high-torque 4-bar arm, boosting lift capacity by 50%
- Programmed complex algorithms through PID loops and odometry achieving 90% autonomous scoring consistency

InstaTrainVR — Remote
Director of Systems Engineering — *July 2024 – July 2025*
- Overhauled the monolithic backend architecture with Node.js and Redis, cutting API response times by 30%
- Directed a 5-person dev team, implementing an agile workflow cutting the feature release cycle from 6 to 2 weeks
- Launched the 'Hotel Training ROI Calculator,' a key feature that drove a 40% uplift in qualified demo requests

Projects

Autonomous Marine Vehicle | *ROS 2, Python, C++, PCB Design, Raspberry Pi* — *January 2026 – Present*
- Engineered a fully autonomous surface vehicle using ROS 2 nodes to achieve a < 10cm cross-track navigation error
- Integrated RPLIDAR to implement obstacle avoidance algorithms and identify goal gates with a 95% success rate
- Fabricated a custom PCB with 5V/12V power distribution, interfacing IMU and GPS sensors via I2C/UART

ASIC Design & Verification (SiliconJackets) | *SystemVerilog, RTL Design* — *January 2026 – Present*
- Designed a 64-bit calculator in SystemVerilog, implementing a custom FSM to sequence multi-cycle additions
- Constructed a modular verification environment (Driver/Monitor/Scoreboard) to validate functional correctness
- Utilized constrained testing and SystemVerilog Assertions to identify edge cases, achieving a 98% coverage score

RAG-Powered Recruitment Dashboard | *PostgreSQL, pgvector, LangChain* — *December 2025 – Present*
- Developed a RAG-powered tool with LangChain and pgvector to semantically match 150+ members with mentors
- Deployed a full-stack platform with Next.js and Express to manage a central repository of 100+ interview insights
- Optimized semantic search latency to <100ms utilizing Gemini Embeddings and HNSW indexing for 150+ resumes

Loop (1st Place, Solana Track @ UGAHacks XI) | *Rust, Solana, Next.js, Supabase, AI* — *February 2026*
- Architected a trustless scavenger hunt on Solana using Anchor (Rust) and PDAs for automated prize management
- Integrated Haversine logic for <100 meters GPS validation and synced real-time player positions via Supabase
- Developed an AI route generator using Google Gemini to create dynamic, localized quests with custom difficulty

Technical Skills

Languages: C, C++, C#, Rust, Verilog, SystemVerilog, Python, Java, JavaScript, TypeScript, Swift, HTML/CSS
Frameworks: ROS/ROS2, LangChain, Gazebo, MoveIt, PyTorch, TensorFlow, Next.js, React, Express.js, Arduino
Software: pgvector, PostgreSQL, Docker, Linux (Ubuntu), Git/GitHub, REST APIs, MongoDB, AWS (EC2/S3)
Embedded: PCB Design & Layout (KiCad), FPGAs, Microcontrollers (ARM, ESP32), Sensor Fusion (IMU, LiDAR)
Affiliations: Eta Kappa Nu, Startup Exchange (Hackathon Team, Sponsorship Lead), Alpha Kappa Psi