

# JAI VIVEK NAGARAJ

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## EDUCATION

*Bachelor of Science, Computer Science (Turing Scholar)*

**GPA: 3.89/4.0**

Aug 2024 – Dec 2026

**The University of Texas at Austin**, Austin, TX

completed 102 credits

- Relevant Coursework: Operating Systems Honors | Data Structures Honors | Computer Architecture Honors | Discrete Math Honors | Game Theory | Matrices & Linear Algebra

**Liberal Arts and Science Academy HS**, Austin, TX

Weighted GPA: **4.83/4.0**

May 2024

- 2024 National AP Scholar on 14 Advanced Placement Courses | Earned *highest overall GPA* in class of 2024

## RESEARCH EXPERIENCE

**CLeAR Lab**, ODEN Institute at the University of Texas at Austin

Mar 2025 – Present

- Researching the intersection of control theory, game theory, and reinforcement learning applied to autonomous robotics under **Prof. David Fridovich-Keil**.
- Implemented novel game-theoretic motion planning algorithm for hybrid-information environments, paper pending
- Currently designing reinforcement learning algorithm to optimize information gathering and objective performance while learning environment dynamics.

**Independent Research Study in Computer Science**, LASA HS

Aug 2023 – May 2024

- Followed self-designed, year-long research in Algorithmic Game Theory and its applications to CS
- Developed Routing Game Simulator & *Presented simulator and research results at ODEN Institute, UT Austin*.

### Other Projects

- **Game Boy Emulator**: Created an emulator for the Nintendo Game Boy Classic Console. Emulates the entire SM83 ISA, memory bus controller, and pixel processing unit to display graphics. Apr 2025 – May 2025
- **Tetris AI**: Programmed the popular video game Tetris using Java Swing, then used a genetic algorithm to train an AI to play Tetris at a superhuman level. Aug 2024 – Dec 2024
- **Web Crawler and Search Engine**: Built a web crawler to form a *positional inverted index* of portions of the web and perform complex webpage retrieval queries via a *recursive descent parser*. Aug 2024 – Dec 2024

## WORK EXPERIENCE & ACTIVITIES

**Fretail Hackers Organization**, University of Texas at Austin

Feb 2025 – Present

- Worked in a cross-functional team to manage planning and run-of-show logistics for nationwide hackathons hosting 1500+ student hackers.

**Cybersecurity Division Intern, Texas Department of Public Safety**, Austin, TX

Jun 2023 – Aug 2023

- Implemented policies, performed risk analysis, and created System Security Documentations for DPS security that aligned with NIST 500-83 benchmarks
- Served as interim penetration tester for Windows 7 and 10 operating systems

## ACADEMIC AND COMMUNITY AWARDS

University Honors List, University of Texas at Austin

Fall 2024, Spring 2025

National Merit Scholar, USA

May 2024

Graduation with Highest Honors, Liberal Arts and Science Academy (Top 2% of class)

May 2024

Gold Medal, President's Volunteer Service National Award (250+ hours)

April 2024

## TECHNICAL SKILLS

Programming Languages: Python | C/C++ | Java | HTML/CSS/JS | Bash/PowerShell | x86/AArch64 ASM

Software libraries: ROS 1 | Jax | NumPy | PyTorch