

JAMES TABAKIAN

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EDUCATION

Molinaroli College of Engineering and Computing, University of South Carolina

Columbia, SC

Bachelor of Science in Computer Science

2023 - 2026

Scholarships: Life Scholarship, Capstone Scholarship

Relevant Coursework: Artificial Intelligence, Big Data Analytics, UNIX/Linux Fundamentals, Operating Systems, Computer Architecture, Computer Ethics

PROGRAMMING KNOWLEDGE AND SKILLS

Languages: Python, Java, C++, C#, SQL, JavaScript, HTML/CSS

Frameworks & Tools: PyTorch, React, WPF, JavaFX, Unity, Git/GitHub

Platforms: Windows, Linux

RELEVANT WORK EXPERIENCE

i-Maps Research Lab

Software Developer | Columbia, SC

September 2023 to Present

- Rebuilt a **6,000+ line MATLAB** application into a modern, **multi-threaded C#** implementation, achieving a **10×** **reduction** in computation time.
- Developed a robotic arm control program in **C++** for automated **ultrasonic scanning**, integrating sensor feedback for precise, repeatable motion.
- Designed and implemented a responsive **WPF**-based front-end **UI**, enabling real-time graph visualization, interactive controls, and a significantly improved user experience.
- Collaborated with faculty and graduate students to integrate software into **NASA-funded** ultrasonic wave analysis projects.

Columbia Custom PCs LLC

Founder | Columbia, SC

August 2024 to Present

- Generated over **\$100,000** in revenue through the assembly and sale of more than 150 fully customized systems, each tailored to specific performance and budget requirements.
- Built a full-stack web app for tracking PC parts, creating builds, monitoring inventory levels, and recording sales. Implemented real-time analytics, automated stock adjustments, and a dashboard for business insights.
- Created detailed build logs, performance benchmarks, and troubleshooting documentation for each system, improving customer support efficiency and reducing post-sale issues.

PROJECTS

- **Smart Grocery App (Flutter, Firebase, SQL)** Developed an android app with user authentication, product search and price comparison, store selection, and shopping cart features, integrating web scraping and optimized shopping path generation for efficient in-store navigation.
- **ASL Gesture Recognition (PyTorch)** Built a CNN with transfer learning (AlexNet) to classify ASL hand gestures, achieving 95% accuracy after data cleaning, hyperparameter tuning, and fairness evaluation
- **AI Checkers Bot** – Built a bot using the **minimax algorithm** with **alpha-beta pruning** that consistently outperformed skilled human players, demonstrating AI search optimization.

EXTRACURRICULARS

- Competed in more than 60 rated chess tournaments. Won several events and tied for **first place** in the S.C. Scholastic State Chess Championship. Member of the UofSC Chess Club.
- Member of the **3D Assembly Team** at East Cooper Center for Advanced Studies, charged with the planning, building, and maintenance of multiple **3D printer kits** for scholastic use and recognized for problem-solving and troubleshooting skills.