

# JAMES TABAKIAN

Columbia, SC | atabakian0@gmail.com | [LinkedIn](#)

## EDUCATION

**Molinari College of Engineering and Computing, University of South Carolina**

**Columbia, SC**

*Bachelor of Science in Computer Science (2023 - 2026)*

*GPA: 3.6*

**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:** PyTorch, React, WPF, JavaFX, Unity

**Tools:** 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 to achieve  $\pm 0.1$  mm repeatable positioning on a stepper-driven linear rail.
- Built a WPF front-end for real-time signal visualization and interactive control.
- 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 **\$100,000+** **revenue** from designing and assembling 150+ custom PC systems.
- Created build logs, benchmarks, and diagnostic documentation, reducing post-sale support incidents.

## PROJECTS

- **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.
- **PC Parts Inventory Management System (React, Firebase, SQL)** created a parts tracking, automated inventory updates, sales records, and real-time analytics dashboards.
- **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.
- **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.