# Salman Aji

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## EDUCATION

**Brown University**                                                           Providence, RI | **September 2023 − May 2027**
B.Sc. in Computer Science, B.Sc. in Applied Mathematics *GPA: 4.0/4.0*
*Relevant Courses:* Software Engineering, Data Structures, Machine Learning, Computer Systems, Computer Vision, AI, Deep Learning
**The National Center for the Distinguished (STEM Magnet High School)** *GPA: 100/100*          Latakia, Syria | **June 2022**

## EXPERIENCE

**VectraFlow Project**, Incoming Research Assistant                              Providence, RI | **May 2025 − Present**
- Selected for Brown's prestigious **Undergraduate Teaching and Research Award (UTRA)** to join **VectraFlow**, an AI-augmented database system integrating LLMs and ML for clinical data querying.
- Working with **50,000+ longitudinal patient records** spanning **50 years**, the largest clinical dataset in Rhode Island, to improve health data accessibility and analysis.
- Investigating with clinicians & data managers at **Rhode Island Hospital** to define system requirements and lead agile development cycles.
- Joining the **LLM Agents Team** to design AI agents for **cohort selection**, **query correction**, and **data transformation**, aiming to reduce query time by over **90%**.

**Computer Science Department at Brown**, Head Teaching Assistant               Providence, RI | **February 2025 − Present**
- Appointed as the Head Teaching Assistant for Brown's new mandatory AI course. Responsible for leading and hiring a team of TAs from a competitive pool of **200** applicants, designing course materials, and developing autograders.
- Facilitated **200+** students' learning by leading weekly 2-hour help & lab sections; debugging; answering questions.

**Computer Science Department at Brown**, Research Assistant                    Providence, RI | **November 2024 − May 2025**
- Collaborated with Professor Amy Greenwald on Efficient Inverse Multiagent Learning, using Inverse Reinforcement Learning to model Spanish electricity markets as stochastic Fisher markets.
- Achieved **2.02**x lower mean squared error (MSE) compared to the ARIMA method, significantly boosting forecasting accuracy.

**HousingWorks RI**, Data Analyst and Research Intern                           Providence, RI | **February 2024 − August 2024**
- Automated data scraping, entry, analysis, and visualization using Python and R for large U.S. Census datasets to identify trends in housing affordability across Rhode Island municipalities, reducing time spent on repetitive tasks by **70%**.
- Conducted research on zoning policies to assist in the creation of the Housing Fact Book 2024, a key publication used to influence public policy and inform stakeholders and investors in Rhode Island.

## PROJECTS

**Bruno's Compass (Ongoing project) | Java, TypeScript, React, HTML, CSS, JUnit**                    **Ongoing**
- Developing an engaging website for **1000+** international students at Brown to ease their transition to life in the US.
- Integrated an AI chatbot trained on Brown-specific info to provide instant, reliable answers to student questions.

**Multi-Agent Framework for Go Gameplay | Python**                             **September − December 2024**
- Programmed a suite of AI agents for the game of Go, including Monte Carlo Tree Search (MCTS), Q-learning, and deep learning models for value and policy learning, achieving an ELO rating of **1700**.
- Won a class-wide Go agent tournament, outperforming **65+** participants by using a hybrid approach with an agent combining MCTS, Q-learning, and Alpha-Beta pruning.

**Fullstack Vocabulary Tracker Web App| TypeScript, Firebase, Next.js, Playwright, Clerk**          **January − February 2024**
- Designed Vocablo, an AI-powered language learning web app using React, TypeScript, and Java, enabling Spanish learners at Brown to track vocabulary progress and identify gaps by automatically categorizing words into thematic clusters.
- Implemented flashcards and integrated AI-powered testing to reinforce learned vocabulary and track user progress.

**Compact Operating System | C, C++, Git**                                     **February − March 2024**
- Created a small operating system that allowed the creation of multiple processes and system calls including fork and sys_page_alloc, using page tables and memory allocation & freeing in C to enable kernel-managed virtual memory.

## EXTRACURRICULARS

**Syria Script, Volunteer TA**                                                 Virtual | **August 2024 − Present**
- Developed curriculum for northern Syria's first Boot Camp for refugee students, impacting **100+** participants.
- Conducted weekly virtual TA sessions for **20+** students in introductory programming concepts.

**Bonner Community Fellowship, Bonner Fellow**                                  Providence, RI | **September 2023 − Present**
- Selected as one of **20** students for a prestigious **4**-year fellowship to advance social justice through community engagement.
- Engaged with Google's IgniteCS to expand CS education for underrepresented high school students in Providence, tutoring 3 hours weekly.

**Full Stack at Brown, Lead Software Engineer**                                Providence, RI | **October 2023 − Present**
- Onboarded and mentored new members, guiding them through project workflows, best practices, and technical stacks.
- Built and deployed customized applications and websites for **10+** Brown and RISD clubs, enhancing user experiences.

## SKILLS, INTERESTS & AWARDS

**Technical Skills:** Python, Java, C/C++, JavaScript, HTML/CSS, R, Racket, SQL, React, TypeScript, Playwright, Firebase, Next.js, Docker

**Languages:** English (Fluent), Arabic (Native), French (Intermediate) **Interests:** Linguistics, Social Justice, Music, Kayaking, AI Policy

**Awards:** National Valedictorian of Syria (top GPA in graduating class of **40,000**), Honorable Mention in the International Physics Olympiad, Honorable Mention in the International Mathematical Modeling Challenge