

# SAIRAJA KURELLI

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## EDUCATION

### University of Texas at Austin

Austin, TX

Master of Science and Bachelor of Science in **Computer Science**, Minor in **Business** - 3.9 GPA

Graduated May 2025

- **Relevant Coursework:** Machine Learning, Data Structures, Algorithms, Computer Architecture, Operating Systems, Graphics, Symbolic Programming, Programming for Correctness & Performance, iOS Development, Ethical Hacking
- **Graduate Courses:** Theory & Practice Of Secure Systems, Grounded Natural Language Processing, Communication Complexity, Program Synthesis, Programming Languages, Cybersecurity Technology, Cybersecurity Technology Law and Policy, Securing Real World Systems, Ethics of AI, Human-Computer Interactions

## TECHNICAL SKILLS

**Languages:** Scala, Python, SQL, Java, C/C++, SwiftUI, React-Native with TypeScript

**Big Data Tools:** Spark, Hadoop, Hive, UNIX, Git, Docker, AWS, Kafka, PowerBI Dashboards

## EXPERIENCE

### Data Engineer

Jun 2025 – Present

Visa Inc.

- Fixed data consistency issues between distributed databases for report generation tasks in **Scala** and **Java**, resulting in a **30%** reduction in data discrepancies for affected merchants.
- Transformed fixed 1-second lag alerts into configurable data center-level thresholds between transactions, reducing false positives by **70%**.

### Software Engineer Intern

May 2022 – Aug. 2022, May 2023 – Aug. 2023, May 2024 – Aug. 2024

Visa Inc.

- (S24) Designed a real-time analytics system for Hadoop Resource Utilization, built to optimize performance of a distributed queue with  $\geq 4k$  **Virtual Cores** using **Apache Spark**, **Hive**, and **PowerBI**, fulfilling a key part of team's cloud migration initiative
- (S23) Built a **Spark** pipeline in **Scala** on Visa's **Hadoop File System** to extract **YARN** results for data analytics jobs across orgs, with compression and repartitioning for a **10x** reduction in file size
- (S22) Optim. 16 core **SQL** scripts w/ **JDBC** connections to **Spark-Thrift** servers for faster in-house data processing
- Designed systems with **JUnit** Unit Testing and integrated into **Splunk** to monitor logs in an **Agile** environment

## PROJECTS

- **MDP Modelling (GitHub Link):** Designed a Programming Language with probability embedded in the syntax to support modelling **Markov Decision Processes (MDP)**. Applied the language to model a Blackjack game, implementing a value iteration algorithm to compute optimal policies and value functions.
- **HackMerced-VII Winner (Lablr):** Designed a **Vue.js** Chrome extension with **OpenCV** to detect spatial pixel irregularities and assign tags on image distortions, integrated with Instagram data stored on **AWS S3**
- **TSGC's Design Challenge Team Software Lead (RegoSafe):** Trained computer vision model to classify lunar machinery status using **Detectron2** with **PyTorch**, scoring a 72 AP score on test set
- **Software Developer for iOS App (Habitotchi):** Developed an iOS application that gamifies habit tracking with **SwiftUI** libraries like **Core Audio** and **SpriteKit**

## LEADERSHIP

### President (2023-2024), Vice President of Finances (2020-2023)

Aug. 2020 – May 2024

Association for Computing Machinery

University of Texas

- Designed and hosted community events to build an ACM community of more than 300 UT Students
- Improved Academic Lesson Plans for CS 101s and pioneered new events like **AWS** and **Kafka** workshops
- Coordinated and directed budget resources over **\$19,000** annually from 2020-2024

### Lead Teaching Assistant

Jan. 2022 – May 2025

Elements of Computers and Programming

University of Texas

- Designed quizzes and **Docker** autograders for over **600** students and graded section's **Python** assignments
- Conducted office hours to help students work through questions over Data Structures and OOP concepts