

# Jonah Blackmon

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## EDUCATION

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

May 2028

*Bachelor of Science, Computer Science, GPA: 3.91/4.0*

Relevant Coursework: OS, Computer Architecture, Data Structures, Autonomous Robotics, Linear Algebra, Discrete Math

## EXPERIENCE

**Undergraduate Course Assistant**, Austin, TX

August 2025 - Present

*Teaching Assistant for Discrete Mathematics*

- Supported instruction for 400+ students through office hours and independently led classes of 30+ students
- Assisted faculty in developing course materials and teaching strategies to improve learning outcomes

**IT Integrations**, Fort Worth, TX

May 2025 - August 2025

*Intern*

- Led the digital migration of healthcare facilities across Texas that support 150+ users to a new network system
- Provided on-site troubleshooting to resolve hardware and software issues during the network's transitions

**Autonomous Intelligent Robotics Research**, Austin, TX

January 2025 - Present

*Undergraduate Research Assistant*

- Research with a focus on autonomous intelligent robotics and their role in human-robot interaction
- Developed a gesture-based interaction model for industrial robots that can interact with users in real time

## PROJECTS

**CampusNav - Full-Stack Navigation App | Swift, Git, Firebase, MapBox, MapKit, SwiftUI**

- Published a navigation app specifically for college campuses to improve the student experience of getting to class
- Implemented a custom A\* routing engine over a complete graph of entrances/pathways leveraging existing databases, optimizing routes through buildings and pedestrian shortcuts reducing average walking time by 30%
- Integrated an event discovery system connected with in app routing to allow users to connect seamlessly
- Designed a fully custom SwiftUI interface with original animations, color schemes, and interactive components

**UR5 Human-Robot Interaction Framework | ROS2, Python, OpenCV, Git**

- Built a modular ROS2 framework for gesture recognition, dynamic motion, and real-time imitation on a UR5 arm
- Reduced hand detection latency by ~47% and enabled scalable gestures with state-dependent trajectories
- User studies showed higher social compliance with ratings rising from 1.65/5 to 4.65/5 after greeting integration.

**Quotelt - Full-Stack Anonymous Social Media Audio App | Swift, Firebase, AVFoundation, Git, SwiftUI**

- Built and published an anonymous social platform enabling real-time audio transcription and quote sharing
- Implemented low-latency audio streaming pipeline with AVFoundation and Firebase for scalable transcription

**Memory Management | C, Git, Linux, Assembly**

- Engineered a custom memory management allocation system that outperformed 300+ students in performance and memory utilization. Implemented dynamic page splitting, adaptive use of payload space, and page delimiters

## SKILLS

**Languages:** Java, Python, Swift, C, C++, JavaScript, HTML, CSS, Assembly

**Tools & Frameworks:** ROS2, React, Firebase, SwiftUI, Git, Linux, CAD, OpenCV, AVFoundation, MapBox, MapKit

## LEADERSHIP & COMMUNITY INVOLVEMENT

**ECLAIR Robotics**, Austin, TX

September 2024 - Present

*Member, C.R.A.C.K.L.E. (Contextual Robotics Arm for Knowledge Learning and Exploration)*

- Worked on gesture detection using Leap Motion and integrated ML algorithms for contextual robotic response

**Levinson Foundation**, Santa Fe, NM

June 2023 - Present

*Next-Gen Board Member*

- Appointed to youth board researching and funding activism initiatives; responsible for the disbursement of \$100,000 of funding to organizations, as well as attending national conferences and climate advocacy events

**Texas ACM**, Austin, TX

September 2024 - Present

*Member*

- Participant in software development workshops in UT's chapter of the Association for Computing Machinery