ZANE ALOIA

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PROFILE

First-year at UNC Chapel Hill pursuing a B.S. in Business Administration, a B.A. in Economics, and a minor in Applied Sciences and Engineering. Co-author of two peer-reviewed publications in human-robot interaction (IEEE/RSJ IROS 2025, ACM/IEEE HRI 2026) and researcher in UNC's IRON Lab. Founder of a 501(c)(3) robotics nonprofit (raised $100,000 across two programs) and creator of Pathway, an iOS/macOS app (7,000+ App Store impressions). Pairs technical depth with a record of building and leading teams.

EDUCATION

University of North Carolina at Chapel Hill - Chapel Hill, NC *Expected May 2030*

B.S. Business Administration & B.A. Economics; Minor in Applied Sciences and Engineering
GPA: 4.0 (current)

Fairview High School - Boulder, CO *Graduated May 2026*

GPA: 4.71 weighted

RESEARCH EXPERIENCE & PUBLICATIONS

Conducted human-robot interaction research across two university labs, contributing to two peer-reviewed publications at top international HRI conferences.

Publications

- Zhu, Y., Torres, A., **Aloia, Z.**, & Williams, T. (2025, October). *That's iconic! Designing augmented reality iconic gestures to enhance multimodal communication for morphologically limited robots.* **Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)**. doi.org/10.1109/IROS60139.2025.11246567
- Higger, M., Wang, Z., Rygina, P., Bezerra, L. F., Daigler, L., **Aloia, Z.**, Wu, S., Chen, A., Pandey, I., & Williams, T. (2026). *RECS: LSTM-based cognitive status estimation for human–robot interaction.* **Proceedings of the ACM/IEEE International Conference on Human-Robot Interaction (HRI)**. doi.org/10.1145/3757279.3785597

Research Experience

University of North Carolina at Chapel Hill - IRON Lab, Undergraduate Researcher *Fall 2026 - Present*

- Contribute to human-robot interaction research in UNC's Interactive Robotics and Novel Technologies (IRON) Lab

Colorado School of Mines - Human-Robot Interaction Lab, Research Assistant *Summer 2023 & Summer 2024*

- Recruited participants and ran trials for multiple human-robot interaction studies
- Programmed Nao robot interactions and assisted with data analysis in JASP; contributed to two co-authored papers

Independent Research Project *Pending Review*

- Authored a white paper on AI integration across Fortune 1000 companies, analyzing ethical implications for employees and consumers

ENTREPRENEURSHIP & TECHNICAL PROJECTS

Pathway Degree Planner - Founder & Developer

- Built and launched an iOS/macOS app (Swift, SwiftUI, Xcode) that helps college students plan their degree requirements
- Reached 7,000+ App Store impressions and 400+ downloads; expanded to multiple universities nationwide
- Integrated UI/UX design, data handling, and third-party APIs
- Owned the full product lifecycle as an independent developer, from first design to App Store launch

LEADERSHIP EXPERIENCE

Carolina Economics Club - Executive Board Member *Fall 2026 - Present*

- Serve on the executive board as First-Year Representative; plan club events and recruit and engage students

FIRST Robotics Competition Team #10980, "The Deadbolts" - Founder & Team Captain *Senior Year*

- Founded and led a second FIRST Robotics Competition team, built from the ground up to focus on competitive performance

- Formed a 501(c)(3) nonprofit and raised $65,000 through community outreach and corporate grants from BAE Systems, NASA, Medtronic, and Gene Haas
- Expanded STEM access across Boulder and grew team diversity by 40%
- Advanced to the FIRST World Championship in Houston, finishing in the top 10% globally
- Earned the Rising All Star and Rookie All Star awards for community impact

FIRST Robotics Competition Team #2036, "The Black Knights" - Team Captain *Junior Year*

- Led a 45-member team across build, programming, and design subteams, expanding membership to students from six schools
- Managed budget decisions, raised $35,000 in sponsor funding, and represented the team to sponsors and judges
- Directed the first two out-of-state competitions, delivering the best-ever season results (top 10% in the world)

FIRST Robotics Competition Team #2036 - Programming Captain *Sophomore Year*

- Managed the software team's development of autonomous and tele-operated robot functions in Java
- Led the team to its first out-of-state competition in 14 years and tripled community outreach efforts
- Became the youngest Programming Captain in team history

FIRST Robotics Competition Team #2036 - Programmer, Teleop Lead *Freshman Year*

- Collaborated with the software team to develop new autonomous motion systems and advanced preprogrammed motion sequences
- Served as Teleop Lead, programming driver-controlled movements that contributed to standout competition performance

CERTIFICATIONS

Introduction to Artificial Intelligence Certificate

- Two-semester, college-level AI course through a joint program between The Coding School and BVSD
- Covered machine learning fundamentals, neural networks, and ethical considerations in AI

Leadership, Ethics, and Corporate Accountability Certificate

- One-semester, graduate-level course through Harvard Business School Online
- Covered ethical decision-making, values-based leadership, and risk tradeoffs

WORK EXPERIENCE

New Peaks Neuropsychology

- Designed and implemented a HIPAA-compliant system for digitizing and permanently storing patient files

Private Speech-Language Pathology Practice

- Maintained and organized a therapeutic farm used in speech-language therapy sessions for children

EXTRACURRICULAR / VOLUNTEER ACTIVITIES

UNC Student Organizations

- Member of Ram Robotics, Busi-Tech, and the Entrepreneurship Club

Robotics Outreach

- Volunteered at local STEM fairs and robotics competitions; mentored elementary and middle school students

Forever 15

- Selected as one of 15 members of a youth philanthropy council through the Community Foundation of Boulder County; raised funds for local foundations

SKILLS

Programming Languages: Swift, Java, Python

Technical: iOS/macOS Development (SwiftUI, Xcode), API Integration, Data Analysis, AI/ML Fundamentals, HRI Research Methods

Leadership & Communication: Cross-Functional Leadership, Fundraising & Sponsorships, Event Planning, Public Speaking, Technical Writing