

Trey Tuscai

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EDUCATION

Colby College, Waterville, ME

Anticipated May 2025

Elite Private Liberal Arts College

Major: Honors Computer Science with a Concentration in Artificial Intelligence

GPA: 3.6 / 4.0

Relevant Coursework: Data Structures and Algorithms, Analysis of Algorithms, Data Analysis and Visualization, Programming Languages, Computer Organization, Software Engineering, Neural Networks, Deep Learning, Generative AI, Game Design

University of St Andrews, St Andrews, Scotland

Study Abroad Fall 2023

Relevant Coursework: Foundations of Computation, The Internet and the Web: Concepts and Programming

PUBLICATIONS

[under review] Trey Tuscai, Naser Al Madi. “**Optimizing Radial Interfaces for Eye-Movement Authentication on Smartphones.**” In ACM Symposium on Eye Tracking Research & Applications (ETRA) 2025.

- Developed and evaluated radial gaze-based authentication interfaces for smartphones, identifying an optimal design that balances security and usability.

CAMPUS INVOLVEMENT

Colby College Men’s Lacrosse

Sept 2021 - March 2024

- Starting Defense/LSM in highly competitive New England Small College Athletic Conference (NESCAC), which is comprised of sports teams from 11 of America’s most selective schools.
- Committed 30+ hours/week in Fall and Spring semesters.

PROGRAMMING AND TECHNICAL SKILLS

- Experienced in a wide range of programming languages, including Swift, Java, Python, C, and JS, enabling versatility in developing various software solutions and web applications.
- Adept in iOS development, demonstrated by engineering an iOS eye-movement authentication system incorporating vector calculations, computer vision, and 3D modeling, as well as the Dowsing social media app with robust architecture, secure authentication, and intuitive UI design.
- Proficient in object-oriented design, software development, distributed systems, advanced algorithms, machine learning, version control, and database modeling.

KEY PROJECTS

- **Eye-Movement Based Authentication:** Developed an eye-movement authentication system using radial interfaces for iOS.
- **Mary Low Coffeehouse Shift Scheduling:** Built a web-based scheduling system for staff at Colby College’s coffeehouse.
- **Dowsing:** Created a social media app for rating and discovering water fountains on iOS.

WORK EXPERIENCE

Large Language Model Data Trainer, Outlier AI, Remote

Oct 2024 - Present

- Selected as an expert in Java for the fine-tuning and enhancement of Large Language Models.
- Applied expertise in software development and AI model training to improve natural language understanding and model accuracy.
- Collaborated with a team to enhance the performance of AI systems through data annotation, coding, and algorithm optimization.

Coding and Robotics Instructor, STREM HQ, Houston, TX

June 2024 - July 2024

- Instructed students on the fundamentals of robotics, including assembly and operation of Arduino-based robots.
- Developed and implemented curriculum that combined coding, engineering, and creative design.
- Facilitated hands-on learning experiences, guiding students to apply theoretical knowledge in practical projects.

iOS Developer, Dowsing, Houston, TX

Jan 2023 - Mar 2024

- Engineered Dowsing, an innovative water fountain rating app, as the sole creator and developer.
- Developed complete app architecture, user interface, and functionality using Swift, Javascript, UIKit, and MapKit.
- Designed systems for account configuration, user ratings, user reviews, and photo-sharing within Dowsing app, highlighting proficiency in data management and app scalability.
- Leveraged user feedback, leading to significant improvements in app features and overall usability.
- Published app on the Apple App Store, achieving ~150 user downloads.