

Carlos Perches

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Education

University of Northern Colorado, BS in Software Engineering (*Magna Cum Laude*)

Aug 2022 – Dec 2025

- GPA: 3.89, Dean's List and Citation for Academic Excellence
- **Coursework:** Algorithms and Data Structures, Database Systems, Software Engineering, Object-Oriented Design, Artificial Intelligence

Experience

Mobile Expert, T-Mobile – Greeley, CO

Oct 2024 – Current

- Diagnosed and resolved software and hardware issues through systematic troubleshooting.
- Guided customers through setup, data migration, and feature optimization to improve user satisfaction.
- Communicated device functionalities clearly to non-technical audiences.
- Maintained up-to-date knowledge of security, software, and network troubleshooting procedures.
- Engaged customers to identify needs, recommend solutions, and drive sales in a collaborative team setting.

Projects

Mittens: Adaptive Isolation AI Agent

- Engineered a high-performing C++ agent that competed against peer AIs and leveraged Minimax with Alpha–Beta pruning and adaptive iterative deepening to maximize win rate.
- Designed a dynamic heuristic that shifts focus across mobility, center control, and opponent distance depending on game phase and board occupancy.
- Implemented a 7-second, time-limited search loop with move caching, action pruning, and scoring to optimize decision quality under real-time constraints.
- Ranked 1st in a school-wide Isolation AI competition for outperforming all other agents.
- *Tools: C++ | Concepts: Minimax, Alpha–Beta Pruning, Iterative Deepening, Game Theory, Heuristic Evaluation*

Stock Analysis Website

- Developed a full-stack stock analysis web app to help users make informed investment decisions through trend visualization.
- Designed RESTful Flask APIs and integrated them with a Vue.js frontend for real-time updates.
- Implemented secure Google OAuth login and deployed the site on DigitalOcean for production.
- *Tools: DigitalOcean, Google OAuth, Vue.js, Flask | Languages: Python, TypeScript, HTML/CSS*

Nutrition Tracking App

- Built a nutrition-tracking web app for users to log meals, visualize progress, and manage goals.
- Developed reusable Vue.js components and implemented dynamic routing using Vue Router for seamless navigation.
- Integrated Google OAuth 2.0 authentication and PostgreSQL persistence within a containerized Docker environment for reproducible deployment.
- Collaborated in a team of five using GitHub for version control, code reviews, and agile development.
- *Tools: Vue.js, Docker, Docker Compose, PostgreSQL, Google OAuth | Languages: TypeScript, HTML/CSS*

Technologies

Languages: Java, C#, C++, Python, SQL, JavaScript, TypeScript, HTML/CSS

Frameworks/Tools: .NET, PostgreSQL, Vue.js, Django, Flask, Git, GitHub, GitLab

Collaboration Tools: Jira, Slack, Microsoft Teams

Awards

- **Finley–Ledall Business Scholarship** (2023, 2024) – Scholarship awarded for outstanding academic performance and leadership potential.