

Nathan Towsley

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EDUCATION

California State University, Monterey Bay

B.S. Computer Science, Concentration in Software Engineering

May 2027

(expected)

Relevant Coursework: *Data Structures & Algorithms, Software Design, Internet Programming*

SKILLS

Programming Languages: Java, Python, C++, Kotlin, JavaScript, Typescript, SQL, Bash

Libraries & Frameworks: Express, React, Flask, Node.js

Tools & Technologies: Git, Docker, MySQL, Android Studio, Postman, Linux/WSL

PROJECTS

DiffAid | *Python, Git, Google Gemini API, Typer, Pydantic, Rich*

- Developed a Python CLI using Typer and Gemini to automate reviews of staged Git diffs for bug prevention
- Enforced reliable LLM output using Pydantic validation to ensure deterministic JSON output
- Designed a decoupled architecture via abstract base classes for extensible, multi-provider AI engine support
- Validated system stability with Pytest and unit mocks to simulate complex Git environments and API failures
- Designed a modular review engine to support multiple AI providers and future extensibility

EXPERIENCE

Open Energy Dashboard | *Software Engineering Micro-internship - CTI / CodeDay*

Nov 2025 - Dec 2025

- Contributed to an open-source platform that helps organizations analyze building energy usage and identify efficiency opportunities
- Implemented user-initiated password change flow ([Issue #1526](#)) to improve account security and user experience
- Built a global **React** modal and an **Express.js** route to validate the current password and update credentials securely
- Used **bcrypt** for hashing and **Sequelize** to persist encrypted passwords while maintaining compatibility with existing admin tooling
- Worked with maintainers to validate design decisions, maintain compatibility with admin tools, and adhere to project code conventions ([PR #1558](#))

EXTRACURRICULAR

Programming Team (Club) - California State University, Monterey Bay

- Analyzed data structures & algorithms through weekly team problem-solving sessions using platforms like LeetCode and Kattis, strengthening algorithmic thinking and collaborative debugging skills