# Cole Uyematsu

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## Education

**Pomona College** Claremont, CA

*Bachelor of Arts, Computer Science and Mathematics double major* *May 2026*

**Thesis:** Comparative Analysis of Generative Adversarial Network Architectures using Distance Metrics

**Teaching Assistant:** Advanced Algorithms (Spring 2026)

## Experience

**ASPC** | **Website** | **Repository** Claremont, CA

***Product Manager / Software Engineer*** *May 2025 – Present*

- Implemented a Python-based ranked-choice voting algorithm to process student ballots, reducing election tabulation time by over 95% and replacing a fully manual workflow.
- Built TypeScript/Express API routes integrating external course APIs with MongoDB, automating bulk ingestion of 1,500+ course listings and eliminating ∼10 hours of manual data entry per semester.
- Redesigned course review submission flow in Next.js with improved search, growing total reviews by 2.7×

***Software Developer*** *Dec 2024 – May 2025*

- Migrated a legacy Ruby on Rails application to MERN stack (MongoDB, Express, React, Node), improving site performance and growing adoption from under 30% to over 90% of the student body.
- Built and deployed core features including Course Search and Events Calendar in React, maintaining 60% user retention throughout the semester.
- Coordinated development workflow using Jira for sprint planning and GitHub Actions for CI/CD with enforced code review approval processes.

**P-ai** Claremont, CA

***Product Lead*** *Sept 2024 – May 2025*

- Built backend infrastructure for *p-RoomMatch*, a roommate-matching platform for the Claremont Colleges: designed the database schema, implemented WebSocket-based real-time chat, and developed the clustering pipeline connecting ML algorithms to the frontend.
- Managed the AI sub-team implementing clustering algorithms (KNN, GMM) in Python/scikit-learn, evaluating performance using silhouette scores and conducting user testing with 20+ participants.
- Directed *p-MarketForecast*, a financial forecasting tool for retail investors: oversaw development of time-series prediction models using LSTM, ARIMA, and BERT in PyTorch and TensorFlow.

## Projects

**Trekt** | *Interactive Travel Visualizer* | Website | Repository *July 2025 – Aug 2025*

- Built a 3D geospatial visualization engine using React, MapLibre GL, and PostGIS-enabled PostgreSQL to render interactive multi-modal trips with route animations and location markers.
- Dockerized Express backend and deployed to Digital Ocean with Nginx reverse proxy.
- Designed a normalized PostGIS schema supporting multi-modal trip segments (flight, drive, walk), with spatial queries for bounding-box filtering and route interpolation.

**Hoops Data** | *NBA Analytics Platform* | Website | Repository *May 2025 – July 2025*

- Created a full-stack analytics platform with Next.js and PostgreSQL serving 1,000+ monthly users, featuring player comparison tools, historical trend analysis, and interactive trivia games.
- Designed REST API querying aggregated statistics from 75+ years of NBA history; processed 1.6M+ box scores using pandas and Beautiful Soup for data enrichment.
- Engineered a 'Six Degrees' player connection engine by modeling teammate pairings as an adjacency list and utilizing BFS to trace relationships across the consolidated database.

## Skills

**Languages**: Python, TypeScript, Java, SQL, C++, Swift, Kotlin

**Frameworks/Tools**: Docker, AWS, React, React Native, Express, Django, PostgreSQL, MongoDB, Pandas, Scikit-Learn, TensorFlow, PyTorch, Matplotlib, Beautiful Soup, Digital Ocean, Figma, Jira

**Methods**: A/B Testing, User Research, Agile/Scrum, CI/CD