

NICHOLAS PEREZ

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EDUCATION

California Polytechnic State University, Pomona

Bachelor of Science in Computer Science

Pomona, CA

Graduated: May 2026

- GPA: 3.4/4.0
- Relevant Coursework: Data Structures, Algorithms, Machine Learning, Database Systems, Software Engineering

TECHNICAL SKILLS

Languages: Java, Python, JavaScript, TypeScript, SQL, HTML/CSS

Frameworks & Libraries: Next.js, React, Node.js, Prisma, TensorFlow, PyTorch, scikit-learn, pandas, NumPy

Databases: PostgreSQL, MySQL

Developer Tools/Skills: Git, Agile/Scrum, VS Code, Jupyter Notebook, Unit Testing (unittest)Wireshark, Docker, AWS (S3, EC2), Vercel

Data Science & ML: Machine Learning, Deep Learning, Data Analysis, Feature Engineering, Model Evaluation

PROJECTS

Gather – Full-Stack Social Recipe Platform | Next.js, TypeScript, PostgreSQL, Prisma, TailwindCSS

Dec 2025

- Led a 5-person team to engineer a full-stack social media platform using Next.js 15, TypeScript, and PostgreSQL (Prisma ORM) deployed via Vercel
- Architected RESTful API with 15+ endpoints supporting complex relational queries, implementing junction tables for many-to-many relationships
- Orchestrated a Git branching workflow (individual feature branches merging into a shared branch for pull request reviews before promoting to production) to isolate unfinished work, and reduce merge conflicts before deployment
- Integrated TheMealDB external API with local database to implement a dual-source recipe search system to reduce code duplication by 40%
- Ran weekly sprint check-ins with a 5-person team to triage bugs, re-prioritize backlog items, hit iterative delivery milestones, and update our SRS/Documentations accordingly

Multi-Cancer Detection ML System | Python, TensorFlow, scikit-learn, pandas

Nov 2025

- Managed a 4-person team to develop machine learning models for lung, breast, and brain cancer detection using both tabular clinical data and medical imaging datasets
- Engineered and evaluated 5+ classification models including CNN, SVM, Naive Bayes, Logistic Regression, and MLP achieving 90%+ average accuracy across cancer types
- Performed comprehensive feature engineering on tabular data and image preprocessing (normalization, augmentation) using scikit-learn, TensorFlow, pandas, NumPy, and Matplotlib
- Executed systematic test procedures (cross-validation, confusion matrices, ROC analysis) to validate model accuracy; authored technical documentation summarizing findings for cross-functional review

Docker Clone | Golang, Ubuntu Linux

Oct 2025

- Built and manually tested a container runtime in Go isolating processes via Linux PID, UTS, and mount namespaces
- Debugged isolation issues using forked child processes and custom SysProcAttr clone flags
- Verified filesystem isolation (chroot, proc/tmpfs mounts) and wrote cleanup routines to rpreved orphaned mounts after tests

Mini-Max Connect 4 vs AI | Java, Minimax, Alpha-Beta Pruning

March 2025

- Developed and tested a Connect 4 AI with turn-based gameplay using minimax with alpha-beta pruning
- Tuned iterative deepening with time-based search limits to achieve 5-8 plies early game, and 15+ plies late game

Simple Trading Strategy Backtester | Python, pandas, Matplotlib, Streamlit

Aug 2025

- Built and tested a backtesting engine for algorithmic trading strategies, validated signal logic against 5 years of historical OHLC data to display results to users
- Pulled and cleaned historical OHLC data from yFinance, manually implemented technical indicators, and simulated buy/sell signals to validate outputs against known reference values to confirm correctness before backtesting
- Deployed an interactive Streamlit dashboard enabling non-technical users to test and validate strategies independently, reducing need for manual support