NICKOLAS J. VELA

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EDUCATION

UNIVERSITY OF CALIFORNIA, SANTA CRUZ   Santa Cruz, CA

B.S. Computer Science   Expected Jun 2027

Cumulative GPA: 4.00/4.00

Relevant Coursework: Data Structures & Algorithms, Machine Learning Basics, Computer Systems and C Programming, LinearAlgebra, Multivariable Calculus, Discrete Math, Computer Systems and Assembly Language

PROJECTS

PROFESSIONAL PORTFOLIO WEBSITE — nickvela.dev   Oct 2025

Technologies: JavaScript, CSS, HTML

- Engineered a fully responsive and mobile-friendly website using HTML, CSS, and JavaScript, ensuring seamless performance across devices and screen sizes.
- Optimized user engagement through interactive elements including draggable physics objects, 3D CSS transforms with perspective effects, and debounced scroll event handlers for improved performance
- Implemented interactive UI/UX features including real-time mouse tracking effects, physics-based animations with collision detection, and smooth horizontal scrolling navigation using RequestAnimationFrame API for 60fps performance

RALLY — IOS EVENT & COMMUNITY APP   Oct 2025

Technologies: Swift, SwiftUI, Xcode, Firebase, Firestore

- Designed, developed, and deployed a fully functional iOS application that enables college students to create, join, and manage community events in real time.
- Implemented Firebase Authentication, Firestore real-time database, and Cloud Storage infrastructure with optimized queries achieving sub-100ms response times and enabling scalability to 10,000+ concurrent users.
- Developed admin dashboard with content moderation tools, multi-level reporting system, user management controls, and role-based access reducing moderation workflow time by 70%.
- Integrated MapKit and CoreLocation APIs to create location-based event discovery with coordinate search, interactive maps, and address autocomplete functionality for campus-wide event exploration.
- Implemented security features including user blocking, content reporting system, account status management, and EULA acceptance tracking for compliance and platform safety.

MACHINE LEARNING DATASET EVALUATION PROJECT   May 2025

Technologies: Python, Scikit-Learn, Pandas, Numpy, Regex, Matplotlib

- Analyzed and cleaned a dataset with over 1,300 rows and 13+ unnamed features, identifying correlations between these features and 8 distinct label classes.
- Built and compared three supervised classifiers (Logistic Regression, K-Nearest Neighbors, Decision Tree), achieving an average accuracy of 96% across models.
- Applied Student's t-test to measure statistical significance of performance differences between models.
- Visualized label distributions and evaluated model predictions to uncover patterns and support interpretation of results.

EXPERIENCE

UNIVERSITY OF CALIFORNIA, SANTA CRUZ   Santa Cruz, CA

Resident Assistant   Aug 2025 – Present

- Served as a community leader and contact point for 50+ residents, creating an inclusive and supportive living environment.
- Developed strong leadership and communication skills through weekly meetings, one-on-one mentoring, and facilitating group discussions.

ADDITIONAL

Languages: Python, C, C++, Swift, JavaScript, SQL, HTML, CSS, Shell Script
Technologies: SwiftUI, Bash, Git, Vim, Firebase, Firestore, VS Code, Xcode,
Libraries: Pandas, NumPy, Regex, Scikit-Learn, Matplotlib