Christopher Thomas Dominguez

Long Beach, California

U.S. Citizen | Systems & Software Engineer | Computer Vision · Systems · Performance-Aware ML
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EDUCATION

B.S. Computer Science – **California State University, Long Beach** May 2026
A.S. Computer Science; Mathematics; Business Administration – **Bakersfield College** May 2024

EXPERIENCE

Software Engineering Intern (Research) – **UC San Diego, STARS Program** Jun 2025 - Aug 2025

- Built a Python-based **constraint + simulation engine** encoding UC Computer Science major prep, General Education patterns, prerequisites, and unit caps to generate **18,000+** valid multi-term transfer plans.
- Designed data structures and evaluation logic to compare competing constraints across multiple target UCs and identify **bottleneck courses** and workload tradeoffs.
- Built user-facing outputs (term plans, flags/explanations) to make constraint-heavy results interpretable; iterated based on user feedback from a CS community college student.

Machine Learning Intern (Research) – **CSU Bakersfield, USDA NIFA SUPERSTAR Program** Jun 2024 - Nov 2024

- Trained and fine-tuned a **MobileNetV2-based convolutional neural network** for multi-class image classification, achieving 90% training accuracy and 87% validation accuracy.
- Built image preprocessing and augmentation pipelines to improve generalization across noisy, real-world agricultural datasets.
- Analyzed training dynamics, validation curves, and misclassifications to guide hyperparameter and architecture adjustments.

Parallel Computing Intern – **CSU Bakersfield, CV Path** May 2024 - Jun 2024

- Implemented numerical workloads using **MPI and OpenMP** on remote compute environments; benchmarked runtime, speedup, and scalability.
- Quantified communication/network overhead across process counts and problem sizes; compared MPI vs OpenMP and recommended when to use each.

PROJECTS

Room-Link (In Progress) – Decision-Support System

- Building a student-first housing and roommate planning platform focused on tradeoff-aware decision support and constraint visibility.
- Prototyping matching/shortlisting interactions and explanation patterns for first-time renters.

University of California Computer Science Transfer Pathway Generator – Python, Data Modeling

- Developed backend logic encoding complex rule systems (major prep, GE patterns, prerequisites) into valid, optimized multi-term plans.
- Generated comparative outputs across multiple target constraints to quantify additional workload and feasibility.

TECHNICAL SKILLS

Languages: Python, C, C++, Java, JavaScript
Machine Learning: TensorFlow, Keras, scikit-learn, NumPy, Pandas
Systems: MPI, OpenMP, Linux, Performance Benchmarking
Tools: Git, GitHub, Jupyter, VS Code, AWS, Figma, Arduino