

# Vincent Duong

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## EDUCATION

University of Southern California

May 2025

B.S. Computer Science

Los Angeles, CA

- **Relevant Coursework:** Algorithms, Operating Systems, Computer Networking, Natural Language Processing, iOS App Development

## TECHNICAL SKILLS

**Languages:** Python, Java, Swift, TypeScript/JavaScript, C/C++

**Frameworks:** SwiftUI, React Native, Django, Spring Boot, FastAPI

**Tools & Infrastructure:** Docker, GraphQL, PostgreSQL, AWS (EC2), Firebase, Git

## EXPERIENCE

### Ascendit Bouldering

May 2025 - Present

Founder / Full Stack Engineer

- Shipped a production iOS app using computer vision to recognize climbing routes from user images, enabling crowdsourced route tracking with hundreds of unique routes across 4 gyms
- Designed and deployed a microservice-based backend (Django + FastAPI) with Docker Compose, supporting async ML inference, task queues, and image processing pipelines
- Built a geometric matching system using affine transforms and RANSAC outlier rejection to associate detected holds with candidate routes, reducing false matches
- Developed GraphQL services and a SwiftUI MVVM client with async/await, caching layers, and real-time activity feeds for gym-wide engagement

### Fours & Fives

Jan 2025 – May 2025

Backend Engineer

- Developed the MVP for cross-platform restaurant recommendation app using React Native and Supabase
- Added ability for users to submit restaurant reviews, create personalized lists, and share app states with dynamic links
- Automated a data ingestion pipeline to aggregate online restaurant data and support periodic database updates

## SOFTWARE PROJECTS

### Red Trainer

Sept 2024 – Dec 2024

- Built a JavaFX desktop tool for runtime state inspection, memory reading, and input automation
- Extended a game emulator to support event-driven logic and automation using Eclipse MAT
- Open-sourced project with 22 GitHub stars and 1,000+ views over rolling two-week periods

### Modern Chinese Dictionary

Feb 2024 – May 2024

- Developed an extensive dictionary with Chinese characters, words, and idioms using React and Spring Boot
- Built dynamic dictionary and NLP parser that splits paragraphs into clickable segments, identifies word types

## ACADEMIC PROJECTS

### Domain Specific Machine Translation (Fine Tuning a Translation Model with Anchor Words)

- Fine-tuned mBART-50 seq2seq model in PyTorch using anchor words;
- Created training loops and inference pipeline to achieve ~30% increase in anchor word translation usage

### Bipedal Revolution (Unity 3D platformer game designed for cooperative parkour with rag doll physics)

- Implemented local co-op mechanics, camera control, and ragdoll joint physics, handling combined player velocities and interactions.