Vincent Do

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Experience

Boeing Company Aug 2024 – Present
Software Engineer *Berkeley, MO*

- Shipped production C++ features delivering **6+ real-time navigation message streams** to embedded display systems, with automated tests and Dockerized build workflows powering end-to-end deployment
- Own integration and release readiness for a shared framework consumed by **60+ dependent modules**, eliminating compatibility regressions by resolving binary timing drifts under real-time constraints
- **Designed** the message protocol, internal SDK, and service interface for a real-time messaging framework, **adopted by other engineers** to downstream modules
- Resolved a long-standing cross-system defect **within 2 weeks of onboarding** to unfamiliar systems by tracing a binary data merge edge case, restoring correct downstream output behavior
- Led month-long evaluation of partner software through custom integration with messaging architecture, validating customer requirements at **1.5× the required throughput** and documenting procedures for future releases

Expedia Group May 2023 – Aug 2023
Software Development Engineer Intern *Chicago, IL*

- Shipped customer-facing Expedia mobile search features, **VIP Access badges (A/B-tested with measurable lift on bookings and CTR)**, **20+ amenity filters**, and error-handling improvements, reducing booking search friction
- Implemented GraphQL schema changes across **5+ Kotlin microservices**, enabling new mobile booking flows across backend and client surfaces
- Built backend support for localized search components across **16 languages**, partnering with frontend and localization teams to validate dynamic rendering before release

University of Wisconsin–Madison May 2021 – Aug 2021
Biomedical Undergraduate Researcher *Madison, WI*

- Analyzed 16,813 genes across 169 phenotypes using Python and R with graph traversal and visualization to identify phenotype-gene associations
- Narrowed the candidate space to 25 high-priority Zellweger genes via frequency thresholds, chromosomal-location filtering, and recursive phenotype hierarchy traversal

Projects

Playable Chess AI | *Python, PyTorch, CUDA, Flask, JavaScript* live demo | code

- Trained a CNN + LSTM policy-value model on 4.18M GM/Magnus PGN positions, reaching 71.2% top-5 accuracy on a 390K-position held-out test set, with a legal-move-policy head and temperature sampling for variety
- Engineered a GPU-accelerated PyTorch training pipeline using mixed precision and a custom IterableDataset, cutting per-epoch time from 20+ hours on CPU to 15–25 minutes
- Deployed an ES-modular browser frontend on GitHub Pages plus a Flask inference API on Railway, supporting Human/Stockfish/Random/Alphabeta/CNN players with sub-second response times

Shortest Path Between Airports | *C++, React, WebGL* live demo | code

- Implemented BFS, Floyd–Warshall, and betweenness centrality over the OpenFlights aviation graph **(1,000+ airports)** to rank the most influential nodes, validated by C++ unit tests across all graph operations

Exploding Chickens | *Node.js, MongoDB* live demo

- Built a real-time multiplayer backend with asynchronous game logic and persistent session state, ensuring consistent gameplay across concurrent players with **1600+** games played

Volleyball Motion Tracker | *Python, MediaPipe, YOLOv8, OpenCV, NumPy* code

- Built a per-frame volleyball spike analyzer fusing pose tracking and ball detection to extract **5+ kinematics**

Technical Skills

Languages: C++, Python, Java, C#, JavaScript, TypeScript, Kotlin, SQL
Frameworks/Libraries: React, Node.js, Flask, PyTorch, GraphQL, RESTful APIs
Tools/Platforms: Docker, Jenkins, Git, Linux, GCP, PostgreSQL, MongoDB, Railway, GitHub Actions, CI/CD

Education

University of Illinois Urbana-Champaign Aug 2020 – May 2024
B.S. Computer Science & Chemistry · GPA: 3.6 *Champaign, IL*