BRUCE WANG

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TECHNICAL SKILLS

Languages: TypeScript, JavaScript, Python, Java, C, C++, SQL, Bash, HTML, CSS, Racket
Frameworks: React, Next.js, Express, Node.js, React Native, FastAPI, Flask, Django, PyTorch, Pandas, Tailwind
Technologies: Git, Docker, Redis, AWS, GCP, Linux, Supabase, PostgreSQL, MySQL, Nginx, Kubernetes, Postman

EXPERIENCE

Software Engineer Intern   **San Francisco, CA**
Plato Technologies   *May 2025 – Aug 2025*
- Deployed **10+** browser-agent RL training environments using **Docker**, **AWS ECS/ECR**, **Terraform**, and **Nginx**
- Architected and implemented synthetic seed-data and task generation pipelines using **Python**, **Pydantic**, **OpenAI**, and **PostgreSQL**, automating manual data entries and reducing cycle time from **1 week** to **>2 hours** per environment
- Built concurrent data preprocessing/normalizaion, with automated API validation and plan-then-execute generation
- Generated and benchmarked **2000+** tasks for **20+** environments, helping train agents from Anthropic, Amazon, and Yutori
- Engineered human scoring workflows using **React**, **FastAPI**, and **TypeScript**, reducing data annotation time by **80%**

Software Engineer Intern   **Waterloo, ON**
Hppn.ing   *Sept 2024 – Jan 2025*
- Expanded user base by **2,000+ MAU** and developed core product features with **React Native**, **TypeScript** and **FastAPI**
- Implemented semantic search for **100,000+** events with **Python**, **PostgreSQL** and **FAISS IVF** (ANN), converting user queries into 256-dimensional dense vector embeddings with OpenAI API and reducing irrelevant search results by **67%**
- Built map view with dynamic marker clustering using Google Maps and Redis, designing **RESTful** API endpoints to reduce render times by **80%** and data payload by **95%** through region-based loading and on-demand data retrieval
- Deployed on **AWS ECS** and **Vercel** using CI/CD pipelines with GitHub Actions and Docker, ensuring **99.9%** uptime

Full-Stack Engineer Intern   **Vancouver, BC**
TopInfoDev Solutions   *May 2024 – Aug 2024*
- Developed a responsive e-commerce platform with **React**, **Next.js**, **Tailwind CSS**, and **MySQL**, leveraging GPT-4o to generate recommendations for **2,000+** products and Google Vision to enable image-based product searches
- Improved API response times by **35%** by implementing **Redis caching** and optimizing database schemas and queries
- Integrated PayPal/Stripe payment methods with **JWT** and **OAuth2**, utilizing **Redux** to maintain persistent cart states

PROJECTS

⭘ **Pianofi – Audio to Sheet Music Transformer** | *Python, PyTorch, Next.js, FastAPI, Supabase, Docker, AWS*
- Shipped pianofi.ca 🔗 with **1000+ users**, an AI platform that enables users to convert any song into piano sheet music
- Built distributed auto-scaling GPU workers with **Redis** queues for **CRNN** audio-to-midi inference, storing data in **AWS S3**
- Created metadata extraction and audio/xml conversion using **Python**, **FastAPI** with **Supabase**, displayed with **Next.js**
- Automated **CI/CD** for 3 microservices using **Docker**, **AWS ECS/ECR**, and GitHub Actions with zero-downtime deployments

⭘ **WatClub – Full-Stack Club Review App** | *React, JavaScript, Django, SQLite, Git, Docker, Selenium*
- Won **1st** out of **100+ teams** in Waterloo CSC Hackathon for developing a club review platform for UW students
- Designed **20+** RESTful APIs using **Django** enabling JWT authentication, commenting, liking, and tag-based filtering
- Built a search engine using **TF-IDF** for relevance and n-grams enabling fuzzy search, reducing query time to under **1s**
- Periodically webscrapped **5+** websites using **Python**, **Playwright**, and **BeautifulSoup**, storing structured data in SQLite

⭘ **SoccerMetrics – AI Soccer Analysis** | *Ultralytics, MediaPipe, Docker, Pandas, OpenCV, React, TypeScript, Flask*
- Won **2nd** out of **70+** teams at GeeseHacks by developing a soccer analysis platform for kick form and angle feedback
- Utilized Ultralytics YOLOv8 for ball tracking and MediaPipe GHUM 3D for extracting biomechanical pose metrics
- Used **Pandas** to analyze critical contact frames and **OpenCV** to overlay skeletal connections and ball trajectories
- Integrated **OpenAI** and **LangChain** to provide feedback and built full-stack system with React, Flask, and Tailwind CSS

EDUCATION

University of Waterloo   Waterloo, ON
Bachelor of Computer Science, Co-op   *2024 – 2028*