Brendan McLaughlin

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EDUCATION

Stanford University, Stanford, CA *Expected Graduation: June 2025*
BS Computer Science / MS Computer Science: AI

Relevant Coursework:

- NLP with Deep Learning - CS 224n
- Deep Learning for Computer Vision - CS 231n
- Systems for Machine Learning - CS 229s
- Parallel Computing - CS 149
- Machine Learning with Graphs - CS 230
- Operating Systems - CS 111
- Deep Learning - CS 230
- Design & Analysis of Algorithms - CS 161
- Web Applications - CS 142
- Decision Making Under Uncertainty - CS 238

WORK EXPERIENCE

Apple, *AI/ML Intern* Jun 2024 – Sept 2024

- Engineered & shipped **21x faster** query pipeline for Apple's ML training data service using on-the-fly downsampling, significantly improving Apple Foundation Model experiment tracking (Java, Spark)
- Proceeded to implement a **90x speedup** using pre-computation & query federation (Kafka, Flink, Iceberg)
- Built fullstack playground app, accelerating API feature development and internal customer acquisition

Tesla, *Software Engineer Intern* Jan 2024 – Apr 2024

- Rewrote core pieces of multimillion-dollar analytics application to move it from cloud to on-prem, **reducing costs by >2x** (Python, Spark, Kafka, Kubernetes, OpenSearch, Next.js)
- Implemented feature to ingest, process, and serve rich metadata in backend service for vehicle aerodynamics analytics, providing critical experiment insights to Aerodynamics team (Golang, Kafka)
- Built real-time data pipelines, saving logistics teams **$1000s/week** of manual extraction (Spark)

NoRamp Labs, *Software Engineer Intern* Aug 2023 – Dec 2023

- Built secure password-less crypto wallet and shipped to 1000s of paying users in 1.5 months

Hatch Learning, *Co-Founder, CEO* Aug 2020 – June 2024

- Founded & led profitable (4 years) K-2 education company, scaled to **$20,000 quarterly revenue**

PROJECTS

d3n: 1st place winner of Cognition Labs AI hackathon (twitter)

- Built AI agent orchestration framework (k8s for agents) in 24 hours with teammates (Python, FastAPI)

Sage: Mobile app that creates purpose in elderly users through gardening (github)

- Led design & development of fullstack mobile app (React Native, Typescript, Firebase)
- Won **2nd place** for "best overall project" and **1st place** for "best visual design" out of 40 teams in CS 147

Custom Diffusion + Cross Attention: Final project for *CS 230: Deep Learning* (video)

- Implemented novel approach for generating consistent sequences of images from diffusion models by embedding cross attention control into custom diffusion model (PyTorch)

Enhanced Sentence Embeddings with SimCSE: Final project for *CS 224n: NLP w/ Deep Learning* (github)

- Implemented an unsupervised SimCSE variant of BERT, achieving improvements in paraphrase detection (PyTorch)

Circuit: Multi-Agent Patient Message Routing System

- Built multi-agent cRAG API and real-time message service with conversational AI sitting between patient and care team. Demoed to Stanford Healthcare. (Python, Next.js, GPT, Supabase, Websockets)

Patent Granted for 3-D Image Capture Device:

- Designed, built, and **patented** automated 3D image-capture device. USPTO 10,765,346 - 04/16/2020

SKILLS

Python · C++ · Golang · TypeScript · Java · SQL· PyTorch · CUDA · Tensorflow · Kubernetes · Spark · Kafka · Iceberg · Flink · Cassandra · AWS S3 · AWS IAM · AWS EKS · Next.js · React · Node.js · CSS · HTML · FastAPI