

Yuval Gerber

y.gerber00@gmail.com · New York City · [LinkedIn](#) · [GitHub](#) · [yuvalgerber.com](#)

EDUCATION

Columbia University — Bachelor of Arts, Computer Science	New York, NY
Relevant courses: Data Structures, Advanced Programming, Discrete Math, Linear Algebra and Probability, Statistics	
Central Washington University — Bachelor of Science program, Biology	Ellensburg, WA

PROJECT EXPERIENCE

HYPE — Real-Time Trading Infrastructure & Execution System

Personal project

- Architected a ~14,000-line asynchronous trading system in Python, ingesting real-time market data via WebSocket, executing trades through a multi-threaded order pipeline and coordinating a desktop UI and bot interface under a unified event-driven architecture.
- Designed paper (simulated) and live execution modes around a shared executor interface, so identical strategy and risk logic is validated under realistic simulated conditions before any live capital is deployed.
- Engineered a concurrency-safe SQLite data layer (WAL mode) and parallelized an 8-check pre-trade risk-filtering pipeline, reducing filter latency by ~40x while keeping UI and data access thread-safe.
- Built resilient networking and process recovery with automatic reconnect, exponential backoff, per-service rate limiting and watchdog-based restart; operated continuously through a 289-trade live session.
- Secured fund custody with an allowlisted transfer path, MFA-gated configuration changes and OS-level credential storage, eliminating any code path capable of unauthorized fund movement.

MiniGPT Studio — Local Language-Model Training Pipeline & Desktop App

Personal project

- Built and trained a 29.4M-parameter decoder-only Transformer from random initialization in PyTorch/MPS on a 445M-token corpus of 305K synthetic conversations, implementing the full pipeline from data preparation and BPE tokenization through training, checkpointing, evaluation and local inference.
- Engineered leakage-aware dataset construction with exact/near-duplicate detection, completion-family grouping, group-level train/validation/test isolation, and a train-only 8K-vocabulary BPE tokenizer.
- Built a fixed held-out evaluation harness with random and unigram baselines; achieved 18.54 perplexity vs. 469.42 and 8,603.77 respectively on the story corpus.
- Implemented fault-tolerant training and reliability engineering (atomic checkpoints, strict stop/resume recovery, speed/memory benchmarking), validated with a pytest suite covering tokenizer, splits, model and checkpoint correctness.
- Built a native PyQt6 desktop interface with background workers, live training telemetry, model generation and saved-run comparison/export.

PROFESSIONAL EXPERIENCE

Technical Unit, Israel Defense Forces — Electronic Warfare Engineer, Laboratory Commander

Mar 2016 — Nov 2019

- Led a laboratory responsible for testing, diagnosing and repairing electronic-warfare and avionics systems on Black Hawk helicopters.
- Built and enforced quality-assurance and safety-compliance procedures, operating under strict time and zero-failure constraints.
- Supervised a team of 50 technicians and engineers across testing, repair and quality assurance.
- Awarded the Elective Modification Award — the top distinction among approximately 300,000 soldiers — for extraordinary contribution in system innovation.

SKILLS

Tools	PyTorch, Transformers, PyQt6, Pandas, Scikit-learn, asyncio, PyArrow, Parquet, pytest, Docker, GitHub, REST APIs, WebSocket APIs
ML/AI	Machine Learning, Deep Learning, BPE Tokenization, Model Evaluation (Perplexity), Attention, Language Modeling, Neural Networks, NLP, Backpropagation, Embeddings, Distributed/Parallel Training, MPS
Languages	Python, SQL, Git, Java, C, Bash