Jonathan Quinn

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EDUCATION

ETH Zurich — Zurich, Switzerland | *Aug 2022 – Aug 2025*
BSc in Computer Science — **GPA: 5.2 / 6.0**

- Thesis on ASR hallucination detection and embedding analysis (Supervised by Prof. Ryan Cotterell & Dr. Alexander Hoyle)
- Coursework: Machine Learning, Probability & Statistics, Numerical Methods, Deep Learning, Information Retrieval

Purdue University — West Lafayette, IN, USA | *Aug 2024 – Dec 2024*
Exchange Program, College of Science — **GPA: 3.8 / 4.0**

- Built 3D graphics pipeline from scratch in C++: vector operations and matrix transformations to rasterization, lighting models, texture mapping, and environment reflection using cubemaps, implementing real-time rendering with OpenGL shaders
- Extended Xinu OS with priority scheduling, memory management, and complete file system implementation in C

WORK EXPERIENCE

Infrastructure Developer — Neuchâtel, Switzerland | *Sep 2025 – Present*
Service informatique de l'Entité neuchâteloise (SIEN)

- Architected and implemented a complete overhaul of the in-house network scanner, achieving a 33x performance improvement (3hr to 5.5min runtime) and enabling hourly instead of daily scans for 1,800+ network devices
- Evaluated a dual-tunnel (device & user) Windows Always On VPN (AOVPN) proof of concept on FortiGate firewalls, configuring XML profiles, IKEv2, RADIUS/EAP authentication, and DHCP integration
- Built a full-stack network path tracing application from scratch (Python backend, PHP/Laravel API, MySQL database, HTML/CSS frontend), integrating team's requirements and enabling engineers to diagnose customer issues through automated path and port lookups, significantly reducing manual lookup and configuration time

Freelance Web Developer — Remote | *June 2025 – Present*
3Steps Athletics

- Designed and implemented bilingual business website for a sports organization using Next.js and Tailwind CSS for browsing and registration, deployed for spring 2026 camps

RESEARCH EXPERIENCE

Lost in Transcription: Embeddings from ASR Transcripts — Bachelor's Thesis | *Feb 2025 – Aug 2025*
Rycolab (ETH Zurich)

- Developed database-driven methodology for identifying corrupted sequences in ASR transcripts, processing 169M sentences using hash-based fingerprinting and run-length analysis
- Discovered and filtered 104K hallucinated sequences affecting 2% of podcast episodes, improving analysis' reliability
- Architected end-to-end NLP research pipeline for 50GB+ podcast corpus, including custom parallelized preprocessing, PostgreSQL-based quality control, and distributed training of Word2Vec/GloVe embeddings on HPC cluster
- Demonstrated systematic semantic divergence between podcast and news corpora through analysis of 2.3B tokens

SKILLS, AWARDS & ACTIVITIES

Programming
Python (scikit-learn, PyTorch, SpaCy, NLTK, NumPy, Pandas), SQL, Java, C/C++

Tools, Systems & Frameworks
Git/GitHub, Linux, Docker, Laravel/PHP, React/Next.js, SLURM

Languages
English (native), German (native), Swiss German (native), French (proficient)

Awards & Activities

- 2nd place, ETH x Optiver Hackathon (50 teams, 2024)
- Winner, Michigan State University Triathlon (2024)
- Ironman Finisher (2025)
- Laureate, Annual Highschool Literature Showcase
- Captain, GCK Lions Hockey Team (2016–2021)

Activities
Triathlon, Trail Running, Ice Hockey, Reading, Guitar, Travel