Nathaniel Navarro

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SUMMARY

Disciplined, fast-learning developer with a demonstrated ability to delve into large codebases and execute on both tooling and foundational compiler and accelerator features. Full cycle development experience creating AXI testbenches and controllers from scratch, with contributions to build tools and compiler passes. Industry experience in Java backends, knowledge graphs, and Linux development environments, with strong organizational, communication, and collaborative skills honed through military experience.

EDUCATION

Cornell University, College of Engineering, Ithaca, NY   **Aug 2021 – May 2024**
Bachelor of Science, Computer Science
Minor in Electrical and Computer Engineering
GPA: 4.11; *Summa Cum Laude*; Dean's List

**Relevant Courses*:* Functional Programming; Programming Languages; Computer Architecture; Microcontrollers; Distributed Systems; Machine Learning; Natural Language Processing; Digital Logic; Algorithms;

EXPERIENCE

Netflix, Los Gatos, CA, *Software Engineer*   **Aug 2024 – Present**
- Expanded transpiler IR expressiveness by implementing support for new transpilation targets in Java, GraphQL, and Avro schema.
- Specified and implemented transpiler CLI tools to speed up developer feedback loop for RDF model creation.
- Engineered collection and monitoring of early-alert resilience metrics for data management services.
- Design, implement, and test control plane APIs, to migrate hundreds of databases to Aurora Postgres.
- Engineered concise, elegant, web-orchestration-infrastructure for the deployment of new webpages leading to 500k monthly increase in users with phone numbers on file.
- Engineered infrastructure, collection, and monitoring of A/B tests to quantify effects of feature deployments.

Capra Research Group, Cornell University, *Research Assistant*   **May 2022 – Aug 2024**
- Delivered an AXI controller generator that connects kernels of arbitrary memory shapes to custom controllers, implemented in the lab's Calyx IR.
- Contributed to the revamped fud2 compiler driver to automate AXI controller compatibility with Xilinx specs.
- Delivered a corrected Verilog AXI protocol implementation, a revamped Linux to FPGA execution pipeline, and planned and developed a from-scratch Cocotb testbench allowing for CI testing of AXI protocol.
- Collaborated with external researchers to isolate dozens of protocol bugs in previous AXI implementation through waveform analysis and source-code inspection.
- Integrated corrected FPGA execution system with existing toolchain-driver to allow for easy execution of programs on physical hardware.

Israel Defense Forces, Israel, *Senior Drill Instructor; Staff Sergeant*   **Dec 2018 – Aug 2021**
- Commanded platoons of 40 recruits and instructed them in the skills of a combat Air Defense Operator.
- Trained and supervised junior Drill Instructors in the correct handling and instruction of recruit squads.
- Collaborated with individuals ranging from private to Lt. Colonel to ensure an organized, efficient, complete training experience at the IDF's Air Defense School for 400 soldiers quarterly.
- Received Award of Excellence (2020) for outstanding performance in the IDF Interceptor Training Course.

SKILLS

Technical: Python, Java, Spring Boot, RDF, GraphQL, Transpilers, OCaml, C, C++, Rust, FPGAs, Linux, Git, Docker,
Languages: English (fluent), Hebrew (fluent)