KRISHNA NARAYAN

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EDUCATION

Bachelor of Science in Computer Science, Chapman University 2018 - 2022
Relevant Coursework: High Performance Computing, Operating Systems, Computer Architecure

Bachelor of Fine Arts in Animation and Visual Effects, Chapman University 2018 - 2022
Relevant Coursework: Mechanics of Motion, Advanced Visual Effects, Color and Design

EXPERIENCE

Software Engineer Aug 2022 - Nov 2022
Nuro *San Francisco, CA*

- Wrote device drivers, hardware validation tooling, calibration updates for autonomous vehicle remote control systems using C++17 and Bash, increasing the total control system fleet size by 80%
- Implemented over-the-air calibration updates for system hardware using Bash and Python 3.8
- Triaged networking and hardware failures on bleeding-edge vehicle test runs, improving vehicle test run mileage by upwards of 30% per run
- Affected by 20% reduction-in-force, with majority of new grads

Research Assistant May 2020 - May 2022
Harrison Lab at Chapman University *Orange, CA*

- Spearheaded research efforts to demonstrate the effectiveness of inverse design vs. conventional design in reducing signal loss and cross-talk in photonic logic devices
- Leveraged Lumerical's Python API to simulated inverse design to create Y-splitter, XOR gate device structures with considerably lower insertion loss, cross-talk than a conventional designed device

Research Assistant Jan 2022 - April 2022
Springer Research Lab at Chapman University *Orange, CA*

- Worked to simulate earliest-deadline-first scheduling with TDMA collision detection to demonstrate collision-free, real-time communication within a low-power, wireless sensor-actuator network
- Simulated sensor-actuator network of radio-equipped microcontrollers using WindRiver Simics

Software Engineer Intern May 2021 - Aug 2021
MetricStream *Santa Clara, CA*

- Implemented and shipped fast, flexible data visualization components using Typescript, React, and D3.js for Metricstream's migration to a React-based frontend
- Led intern group in the development of data schema for transfer of SASB and GRI documentation to Metricstream product for user reference

PROJECTS

Parallelized Agglomerative Clustering. Designed and implemented a parallelized agglomerative clustering algorithm using C++ and MPI (message passing interface), using a weighted average mechanism to determine cluster distancing and SciPy dendrograms for visualization.

Modal CLI Fuzzy-Finder. Developed a TUI-based modal fuzzy-finder for the command line using Rust and grep/find. Modal interface intuitively allows searching, sorting, and option menus to filter by specific file types or hidden files, as well as VIM interaction with search text.

PUBLICATIONS

[1] Michael Efseaff, Kyle Wynne, Krishna Narayan, Mark C. Harrison, "Implementing commercial inverse design tools for compact, phase-encoded, plasmonic digital logic devices," J. Nanophoton. 17(1) 016011 (20 March 2023) https://doi.org/10.1117/1.JNP.17.016011

SKILLS

- **Programming languages:** C++, Python, Rust, Typescript, Bash, Lua
- **Tools:** CUDA, MPI, GCP, Git, Flask, React, Axios, SciPy, pandas, gRPC, Axum, Node.js
- **Interests:** Ice Hockey, Skiing, Guitar, Text Editors, Figure Drawing