

Will Forman

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EDUCATION

Purdue University

Computer Engineering

May 2023

West Lafayette, IN

- **Concentration:** Computer Systems
- **Relevant Coursework:** Data Structures & Algorithms; Operating Systems; Computer Networking; Compilers
- Bioinformatics Club: Co-Founder and Executive Board member

WORK EXPERIENCE

Meta (Facebook) - Software Engineer Intern

May 2022 - Aug. 2022

- Wrote C++ test runner CLI for Instagram's **100k unit tests** to replace old test runner *Menlo Park, CA*
- Used in automated system for **100+ code reviews daily** and by engineers to test their changes locally
- Improved performance over old test runner by **3x**, decreasing time and resource usage
- Eliminated flaky tests due to global state by running each test in its own process, leading to improved reliability
- Implemented multi processing system using Linux system calls: fork, waitpid, and kill
- Interfaced with Python code from C++ using CPython bindings for encoding and decoding Python types
- Investigated incremental bootstrap that loads data in manager process, then is COW into each worker process
- Took project ownership by meeting with stakeholders and producing quality code (low iterations in code review)

Purdue University - Research Assistant

Aug. 2022 - Current

- Investigating improving efficiency of datacenter task scheduling by overcommitting resources
- Collaborating with Google Cloud Infra group, using simulator that mimics Google's production system
- Building big data pipeline with Apache Drill and Apache Beam to handle **30 TB of data**

Amazon - Software Development Engineer Intern

May 2021 - Aug. 2021

- Created asynchronous processing job to transform data in **10M row SQL table** with Java Spring *New York, NY*
- Fixed critical bug a small group of customers faced when using website
- Focused on performance and reliability with concurrency design patterns, rate limiting, and load testing
- Created metrics and alarms to add transparency to batch job along with unit tests to improve reliability
- Executed AB test to fix a different customer pain point, leading to large revenue increase for that situation

Beat the Book Inc. - Backend Tech Lead

Aug. 2021 - May 2022

- Architected Typescript backend for web hosted gaming software, and deployed with Docker + AWS *Virtual*
- Designed PostgreSQL database schemas to support application and created authorized endpoints for them
- Interacted with 3rd party API to get sports data for use in the application

PROJECTS

Chess Engine + Multiplayer Platform

Worked on Jul. 2022 - Current

- Executes simple chess engine using Rust with minimax + alpha-beta pruning *Elixir, Rust*
- Arranges Phoenix Liveview website with multiplayer server, and communicates with Rust using NIF library

Level 7 Load Balancer

Worked on Jun. 2022 - Jul. 2022

- Implemented load balancer for HTTP requests with Round Robin and Least Connections algorithms *Go*
- Checks health actively of hosts using multi-threading, to improve reliability of load balancer

JOS Operating System

Worked on Jan. - Apr. 2022

- Designed OS in guided exercises from MIT 6.828, with preemptive multi-tasking and multi-level paging *C*

SKILLS

- **Languages:** Java; C/C++; Javascript; Python; Rust; Go; SQL
- **Technologies/Other:** Linux; Git; Algorithms and Data Structures; React; Spring; Express; Docker