Will Forman

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EDUCATION

Purdue University **May 2023**
Computer Engineering *West Lafayette, IN*

- Concentration: Computer Systems
- Relevant Coursework: Data Structures & Algorithms; Operating Systems; Computer Networking; Compilers; Object-Oriented Programming; C Programming 1-2; Data Science; Linear Algebra; Probabilistic Methods
- Bioinformatics Club: Co-Founder and Executive Board member

WORK EXPERIENCE

Meta (Facebook) - Software Engineer Intern **May 2022 - Aug. 2022**

- Wrote C++ test runner for Instagram's 100k unit tests used to verify every change to IG servers *Menlo Park, CA*
- Implemented fork based multi processing system: manager process spawns many worker processes to run tests
- Interfaced with Python code from C++ using CPython binding for encoding and decoding Python types
- Investigated complex issues independently and passed code reviews in low number of iterations
- Lead discussion with stakeholders to find improvements to system and overall took ownership of it

Purdue University - Research Assistant **Aug. 2022 - Current**

- Investigate improving efficiency of datacenter task scheduling by overcommitting resources
- Collaborate with Google Cloud Infra group, using simulator that mimics Google's production system

Amazon - Software Development Engineer Intern **May 2021 - Aug. 2021**

- Created asynchronous processing job to transform data in a 10M row SQL table with Java Spring N*ew York, NY*
- Focused on performance and reliability with concurrency design patterns, rate limiting, and load testing
- Executed AB test to fix customer pain point, leading to large revenue increase for demographic
- Produced high quality documentation in the form of internal wiki posts and Agile board task comments

Beat the Book Inc. - Software Engineer **Aug. 2021 - May 2022**

- Architected Typescript backend for web hosted gaming software, and deployed with Docker + AWS *Virtual*
- Designed PostgresSQL 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*
- Call Rust code from Elixir runtime environment using NIF library called Rustler to optimize performance
- Arranges Websocket multiplayer server with Elixir and server-side rendered frontend with Phoenix Liveview

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
- Creates benchmark to test performance of different algorithms using concurrency to orchestrate requests

JOS Operating System **Worked on Jan. - Apr. 2022**

- Designed parts of operating system in guided lab experiments from the course MIT 6.828 *C*
- Utilizes OS mechanisms such as preemptive multi-tasking, multi-level paging, and file system

SKILLS

- **Languages:** Java; C/C++; Javascript; Python; Rust; Go; SQL
- **Technologies/Other:** Linux; Spring; React; Algorithms and Data Structures; Git; REST APIs
- **General:** Communication; analytical skills; problem-solving; active listening skills; leadership; teamwork