Will Forman

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EDUCATION

Purdue University   West Lafayette, IN
B.S. Computer Engineering, Computer Systems Concentration   *Aug. 2019 – May 2023*
- **Relevant Coursework**: Data Structures & Algorithms, Operating Systems, Computer Networks, Compilers, Artificial Intelligence, Microprocessors, Linear Algebra, Probability
- Bioinformatics Club: Co-Founder and Executive Board member

EXPERIENCE

Software Engineer Intern   May 2022 - Aug. 2022
Meta (Facebook)   *Menlo Park, CA*
- Wrote C++ CLI test runner for Instagram's **100k unit tests** to replace previous test runner
- **Invoked 100+ times daily** every time changes are made to Instagram servers
- **Improved performance by 2x and reliability to 100%**, reducing server costs and speeding up execution
- Took ownership and drove impact by meeting with stakeholders and comping up with new features
- Implemented fork based multi processing system where every test runs in it's own process using Linux syscalls
- Interfaced with Python code from C++ using CPython bindings for encoding and decoding Python types

Software Development Engineer Intern   May 2021 - Aug. 2021
Amazon   *New York, NY*
- Fixed critical bug that some customers faced by creating a daily asynchronous processing job with Java Spring
- Added new frontend feature and executed an AB test, leading to a revenue increase
- Queried data from **10M row SQL table**, processed them in Java Spring using multi-threading
- Increased reliability with rate limiting for calling other microservices, load testing, and metrics + alarms

Backend Tech Lead   Aug. 2021 - May 2022
Beat the Book Inc.   *Virtual*
- Architected Typescript Express backend for betting social media, and deployed with Docker + AWS
- Mentored engineers new to our tech stack and created tickets to drive development of our backend
- Designed PostgresSQL database schemas and custom authentication to support the application
- Interacted with 3rd party API to get real time sports data for use in the application

NSF REU Research Fellow   Aug. 2022 - Current
Purdue University   *West Lafayette, IN*
- Apply machine learning to increase the performance of distributed systems in datacenters
- Collaborating with researchers on Cloud Infra team at Google, working on simulator that mimics Google's servers
- Building big data pipeline with Hadoop and Apache Drill to train machine learning model with **30 TB of data**

PROJECTS

Chess Engine + Multiplayer Platform WebApp | *Rust, Elixir*   Oct. 2022 – Current
- Executes simple Magic Bitboard based chess engine using Rust with minimax and alpha-beta pruning
- Arranges Phoenix Liveview WebApp where users can play against chess engine or other users

Load Balancer | *Go*   Jun. 2022 – Jul. 2022
- Implemented load balancer for HTTP requests with Round Robin and Least Connections algorithms
- Checks health actively of host using multi-threading, to improve reliability of load balancer

Operating System | *C*   Jan. 2022 – May 2022
- Designed OS with exercises from MIT 6.828, with preemptive multi-tasking and multi-level paging

TECHNICAL SKILLS

Languages: C/C++, Java, Javascript, Python, Rust, Go, SQL
Technologies/Other: React, Express, Spring, Docker, Linux, Git, AWS, DS&A, Distributed Systems