

# Will Forman

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## EDUCATION

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### 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

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### 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 PostgreSQL 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

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### 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

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**Languages:** C/C++, Java, Javascript, Python, Rust, Go, SQL

**Technologies/Other:** React, Express, Spring, Docker, Linux, Git, AWS, DSA, Distributed Systems