ABDU MOHAMDY

Software Engineer

Self-motivated Backend and Systems Software Engineer with 2+ years of experience in both Big Tech and Startups, working on secure and reliable distributed systems , networking, and operating systems. Fast learner and pragmatic engineer with a focus on impact.

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EDUCATION

B.S. Computer Science - Systems Track
09/2018 - 06/2022

QuestBridge Scholar.

M.S. Computer Science - Computer & Network Security Specialization
01/2022 - 06/2023

Coterminal Program.

Stanford University

Relevant Coursework

Advanced Operating Systems, Advanced Computer & Network Security, Advanced Cryptography, Digital System Architecture, Parallel Computing, Computer Networking, Distributed Systems, Graph Theory, Applied Number Theory and Field Theory.

WORK EXPERIENCE

Software Engineer (Codepoint Fellow)
Sutter Hill Ventures: Working with *EdgeGuardian* (Lacework) & *Sigma Computing* (08/2023 - 04/2024)   **Palo Alto, CA.**

At Lacework Edge:
- Added android support to L3 and L4 traffic capture by implementing the android client's VPN service tunnel.
- Added android L7 traffic control by integrating the Rust DNS server to capture and proxy traffic to the SASE network.
- Improved the in-cloud connector agent's reliability by building diagnostics reports and alerts systems on traffic drop.
- Designed a mechanism to use MDM SCEP certificates to securely authenticate guest users improving the Zero Trust pardigm.

At Sigma Computing:
- I designed a new service to securely crawl and migrate interlaced customer data (SQL and Object Storage) across clouds and regions, as well as develop a working a prototype.
- I improved the scalability of the in-house deployment service using Kubernetes and Terraform.

Software Engineer Intern
Meta (06/2022 - 09/2022)

Menlo Park, CA.

- Part of the WAN Controller team, I developed a new tool to measure traffic loss across Meta's Express Backbone network that connects their Data Centers. I also proposed and developed an extension to the project that uses Next Hop Group versions in Arista's LSP Agents for improved accuracy down to packet granularity.

Software Engineer Intern
Google (06/2021 - 09/2021)

Mountain View, CA.

- Worked with the gSSD team to create a fuzzing tool to test Google-designed NVMe SSD flash drives used in GCloud. I researched, and identified the best technical approaches and technology to base the tool off of.

Software Engineer Intern
NVIDIA (03/2021 - 06/2021)

Santa Clara, CA.

- Part of the Neural graphics team, I developed low-level drivers to support Nvidia's proprietary ML upscaling technology, DLSS.
- I designed, prototyped, and implemented, a new tool for AI scaled video quality comparison.

PROJECTS

Osiris IoT Hub (09/2023 - 02/2024)
IoT Service running on a Pi/4 to control multiple MCUs and SBCs that I use for personal projects including a self-watering plant pot, E-Ink picture frame, coffee machine and Led matrix. It exposes a frontend to control and monitor the devices.

Ruban (06/2022 - 03/2023)
Mutually distrustful turn-based P2P transaction system that builds on 2PC protocol to let nodes commit and challenge actions with a novel majority-based challenge resolution mechanism. I'm using it for my Yu-Gi-Oh dueling disk project.

TockOS (03/2022 - 06/2022)
Added TockOS [tockos.org] support for the Teensy 4.0 Board including implementing peripherals such as SPI and Watchdog.

MIPS Processor *[Class Project] (04/2021 - 05/2021)*
Implemented a 5-stage pipelined processor with most MIPS instructions set, hazard detection, forwarding, and stall control.

PintOS Operating System *[Class Project] (03/2020 - 06/2020)*
Implemented advanced parts of the pintOS Operating System including Processes, Threads, Virtual Memory, and File System.

`C++ / C` `Rust` `Go` `Python` `SQL` `Docker` `Kubernetes` `Systems Design` `Embedded Development` `Security & Cryptography` `Networking` `Web Applications` `Teamwork` `Communication` `OOP` `gRPC` `Linux` `Git` `AWS` `JS` `React` `Node.js` `NoSQL`