Rohan Mathur

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Experience

Microsoft   Redmond, WA
Software Engineer, Windows Core Kernel team   *June 2018 to present*
Software Engineering Intern   *May 2017 to August 2017*

- Owner of the Multimedia Class Scheduler and Windows Registry components in the Windows NT Kernel, involving architectural discussions, feature development, crash dump analysis, bug triage, and security mitigations.
- Core feature contributor to several other NT kernel components, such as the implementation of synchronization primitives, I/O Manager, kernel executive, process structure, syscall architecture, object manager, and more.
- Worked with external partners and internal engineering teams to add useful features and identify/fix bugs, while utilizing telemetry and other data collection techniques to prevent regressions.

NVIDIA   Santa Clara, CA
Systems Software Engineering Intern, Android Platform Performance team   *January 2018 to March 2018*

- Profiled, analyzed, and fixed several I/O pipeline and input related Linux kernel issues on Android products.
- Built tooling for profiling kernel performance issues and a web app for collecting nightly performance test results.

Airware   San Francisco, CA
Software Engineering Intern, Cloud Backend Infrastructure team   *May 2016 to January 2017*

- Added geopackage support in the Airware drone platform, allowing operators to fly Airware missions in areas without internet service.
- Implemented autogenerated drone flight plans in the Airware platform for transmission tower inspections, allowing new missions to be planned quicker by operators.
- Built an Android version of the Ground Control Software operators use to fly Airware missions. It ended up becoming the company's primary product after I left the company.

Rithmio   Champaign, IL
Software Engineering Intern, Android Apps team   *August 2015 to January 2016*

Wyng (formerly Offerpop)   New York City, New York
Software Engineering Intern through the hackNY Fellowship   *May 2015 to August 2015*

Education

University of Illinois at Urbana-Champaign   *August 2014 to December 2017*
Bachelors of Engineering, Computer Engineering

- Took classes primarily on operating systems programming, processor architecture, and embedded systems.
- Teaching assistant for ECE 391 (Operating Systems) and CS 196 (Introduction to Computer Science).
- Held several leadership positions in ECE and CS clubs, including our school's ACM and IEEE chapters.

Projects

AOKP (Custom Android Open Source OS)   http://aokp.co
Developer   *July 2011 to June 2015*

- AOKP is an open-source replacement distribution for Android OS-based devices, based on AOSP releases from Google with added features, and has been downloaded over 10 million times.
- Core team member responsible for kernel and Android OS bringup of several HTC and LG smartphones, involving kernel debugging, device tree development, and OS integration.

gyaradOS   https://github.com/mathur/gyaradOS

- UNIX-like operating system capable of running several user programs simultaneously, reading and writing to a filesystem, terminal command support, and more.
- OS components included a memory manager, display/sound/filesystem drivers, a process scheduler, interrupt handling, and more.

Pipelined Processor in Verilog   https://github.com/mathur/lc3_processor

- Implemented a 5-stage pipelined processor supporting the LC3 ISA, capable of running LC3 assembly programs.
- Features included a full L1-L3 cache hierarchy, eviction write buffer, memory stage leapfrogging, instruction prefectching, memory-mapped I/O support, and more.