Rohan Mathur

Website: http://rmathur.com Email: rohan@rmathur.com
GitHub: https://github.com/mathur

Experience

Microsoft Redmond, WA
Software Engineer *June 2018 to present*
- Windows Kernel Core engineer responsible for daily bug triage, investigation, and routing.
- Developed enhancements to a wide variety of subsystems within the Windows NT Kernel including the Windows Registry and I/O manager.

Software Engineering Intern *May 2017 to August 2017*
- Shipped an enhancement to the Windows Search experience for the Redstone 3 release of Windows 10.
- Integrated an asynchronous event listener within the Microsoft Edge codebase to leverage this enhancement.

NVIDIA Santa Clara, CA
Systems Software Engineering Intern *January 2018 to March 2018*
- Profiled, analyzed, and fixed several I/O pipeline related kernel issues on the SHIELD line of Android products.
- Built kernel-level tooling for profiling input subsystem latency issues, and utilized this tooling to solve a bug.

Airware San Francisco, CA
Software Engineering Intern *May 2016 to January 2017*
- Improved embedded application connectivity with the Cloud backend, enabling offline use of the platform.
- Implemented autogenerated flight plans for transmission tower inspections and prototyped a ground control app.

Rithmio Champaign, IL
Software Engineering Intern *August 2015 to January 2016*
- Developed prototype featuring bluetooth accessory connectivity, informational performance graphs, local data persistence, material design elements, and more.
- Utilized sensor data to provide physical therapy exercise feedback to patients at home.

Wyng (formerly Offerpop) New York City, New York
Software Engineering Intern through the hackNY Fellowship *May 2015 to August 2015*
- Created a new Flask-based web backend microservice that improved backend monitoring and reliability.
- Built REST APIs and custom HTTP authentication processes, while utilizing SQL database functionality.

Education

University of Illinois at Urbana-Champaign *August 2014 to December 2017*
B.Eng., Computer Engineering
Coursework emphasis in systems programming, OS architecture, and OS design. Selected upper division coursework included Advanced Operating Systems (Graduate-level), Advanced Computer Architecture (Graduate-level), Operating Systems, Data Structures, and Algorithms.

Projects

AOKP (Custom Android Open Source OS) http://aokp.co
Lead Developer *July 2011 to June 2015*
Enhanced open source firmware distribution for smartphones and tablets based on the Android OS. Offers features and options not found in the official firmware distributed by vendors of these devices, including enhanced mutlimedia support, improved user interfaces/experiences, native theming support, and more.
- Led open-source project to boast over 11 million users around the world.
- Planned, executed, and code-reviewed several user-facing features that headlined on Engadget, The Verge, etc.
- Worked on vendor-distributed Linux kernel drivers and proprietary blobs to enhance device performance/features.

gyaradOS https://github.com/mathur/gyaradOS
A minimalist, modern monolithic operating system featuring virtualized memory (segmentation and paging), ext2fs filesystem support, keyboard/mouse/RTC/PIT/sound drivers, ELF-formatted user program execution, multiple shells, round-robin scheduling, dynamically allocated memory, and more.

Pipelined Processor https://github.com/mathur/lc3b_pipelined_processor
A 5-stage pipelined processor supporting the full LC-3b ISA. Features split L1 caches, a unified L2 cache with cache arbiter, an eviction write buffer, MEM stage leapfrogging, instruction prefetching, and memory-mapped I/O support.

Positions & Activities

ECE 391 - Computer Systems Engineering – *Teaching Assistant* *Fall 2016 to December 2017*
CS 196 - Intro to Computer Science (Honors) – *Course Assistant* *Fall 2015 to Fall 2016*
IEEE UIUC Chapter – *Technical Vice President* *August 2015 to May 2017*
ACM@UIUC SIGMobile – *Chair* *January 2015 to May 2016*