Neil Ryan

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Education

University of Washington   *Seattle, WA*
Ph.D. in Computer Science & Engineering   *Fall 2018*

Carnegie Mellon University   *Pittsburgh, PA*
M.S. in Electrical & Computer Engineering   *January 2017 - December 2017*
- Cumulative GPA 3.57/4

B.S. in Electrical & Computer Engineering   *August 2013 - December 2016*
- Cumulative GPA 3.40/4
- Department Outstanding Teaching Assistant Award

Experience

Apple Computer   *Cupertino, CA*
GPU Software Intern   *May 2017 - August 2017*
- Transitioned GPU driver memory architecture to map-based system
- Helped create simulator for new driver software architecture
- Worked on Intel 2D graphics chipset

Cisco Systems - Customer Care BU   *Boxborough, MA*
Software Engineering Intern   *May 2016 - August 2016*
- Worked on production level code for Cisco Cloud Platform team
- Helped cut-over application teams to Docker/Terraform system
- Implemented infrastructure for alert correlating and squashing

Carnegie Mellon University   *Pittsburgh, PA*
Research Assistant - Abstract Group   *September 2017 - May 2018*
- Explored viability and implementation for intermittent hardware design
- Worked to extended existing intermittent models to provide memory guarentuees to programmers through interrupt routines

Teaching Assistant - Intro to Computer Architecture (18-447)   *January 2017 - May 2017*
- Advised students in labs focusing on pipelining, branch prediction, superscalar execution, and other topics

Teaching Assistant - Intro to Embedded Systems (18-349)   *September 2017 - May 2018*
- Helped students design real-time embedded operating systems, as well as linux kernel modules to interact with real hardware
- Head TA Spring 2018

Teaching Assistant - Logic Design and Verification (18-341)   *August 2016 - December 2016*
- Assisted students in completing complex hardware projects, such as a USB host

Projects

Hardware

2016   **Game Boy Advance** Emulated original hardware on a Zedboard, capable of running the system BIOS as well as several small games

2016   **MIPS Core** Designed and implemented a 2-way superscalar, branch-predicting, pipelined version of MIPS R2000. Won the class performance competition with 467Mhz clock speed.

Software

2017   **TAPIR** Extended existing work in intermittant computing to operate in a multithreaded context while maintaining idempotence

2015   **Pebbles Operating System** Designed and implemented an Unix-style OS, complete with demand paging, 25 system calls, support for user-space device drivers, and a user-space thread library