Elmer Melendez

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EDUCATION

UNIVERSITY OF TEXAS AT AUSTIN

MS in Computer Science
Expected May 2020

UNIVERSITY OF MASSACHUSETTS AT LOWELL

BS in Computer Science
December 2017

COURSEWORK

GRADUATE

Computer Graphics
Machine Learning
Deep Learning
Wireless Networking

UNDERGRADUATE

Compilers (@ UT)
Operating Systems
Programming Languages
Introduction to Robotics
Data Structures and Algorithms
Software Design & Engineering

SKILLS

PROGRAMMING

Proficient
C • C++ • Python
Familiar
Bash • JavaScript •HTML/CSS
Exposed
Java • Android

TOOLS/TECHNOLOGIES

Lex • YACC • iPerf • tcpdump
sendip • Wireshark • PyTorch
Jupyter Notebook• Matlab
Three.js • OpenGL • Git

INTERESTS

Bouldering • Hiking
Outdoor Climbing
Design • Anime
Cooking • Mixology
Longboarding

EXPERIENCE

QUALCOMM TECHNOLOGIES, INC | Interim Engineering Intern

Summer 2017, 2018, 2019

Linux Data | Summer 2019 Boulder, CO

- Ported Multi-Path TCP protocol on to the Linux Kernel for client/server setup. Amended, tested, and analyzed the schedulers for better performance on Qualcomm technology.
- Amended "sendip" command line tool to provide coalescing of packets for the testing team, allowing recreation of any sequence of packets that caused strange modem behavior.
- Helped bring up eXpress Data Path (XDP) for on device use. XDP circumvented the network stack providing nanosecond performance.

Modem Performance | Summer 2018 San Diego, CA

- Re-adapted QShrink for the Integer Unit (IU) accelerator so that it manipulates the ELF binary to reduce the IU's image size image size by 85%.
- For this project, a legacy Python script was carefully analyzed and re-adapted. Several C attribute specifiers were also added, to carefully setup the image binary for post processing.
- Proactive collaboration with the RF and Modem teams was needed in order to make this project a success.

Aderno GPU ESX Driver | Summer 2017 Boxborough, MA

- Created an in-driver visual overlay framework that helped exhibit driver features. This overlay has been helpful internally for debugging and externally for demo purposes. Used in foveated rendering in Oculus documentation.
- Ensuring code adhered to team standards, performed code reviews and testing

ADVANCED MICRO DEVICES | Co-Op Engineer

Summer 2014, 2015, 2016 | Boxborough, MA

Mac 3D Team

- Worked with the Mac 3D team developing graphics benchmarks, competitive analysis, and debugging GPU driver bugs, all related to Apple computers.

UNIVERSITY OF TEXAS AT AUSTIN | Teachers Assistant

2018 - 2020 | Austin, TX

Game Technology | Elements of Graphics

- Evaluated student's work, taught students how to debug, and helped students find new facet to solving a problem.

PROJECTS

PASCAL COMPILER | Compilers @ UT - Austin

- Wrote a compiler for most of Pascal generates code for a real processor and is run on hardware. Created using Lex, YACC and C.

CLASSIFICATION/DEEP NETWORKS | Machine/Deep Learning

- Classified MNIST using, K-nearest neighbors, support vector machine, and neural networks, from scratch. Used PyTorch to make auto-encoder, image compression, and super-resolution deep networks from current papers.

AWARDS

GEM Fellowship 2018
Sponsored by Qualcomm and the University of Texas at Austin