Skyler Saleh

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Objective

My goal is to apply my hardware/software background to the development of an advanced computer engineering project. I thrive on collaborative brainstorming, teamwork, peer-to-peer learning, and exploring the unknown.

Education

University of Colorado Denver, College of Engineering   GPA: 3.761, Major GPA: 3.858
Bachelor of Science in Electrical Engineering   Expected Graduated August 2015

Recent Work & Research

Optical Character Recognition(OCR) on Qualcomm Adreno GPU
- Optimized the LOOK OCR Engine (part of Vuforia and SCVE) using OpenCL
- Developed new paradigms to efficiently map the complex pipeline to GPU
- Achieved 10-30x end to end performance gain over existing NEON optimized code
- Collaborated with a team located across the globe to integrate the changes

Mobile SLAM
- Tested alternative solutions for solving the Simultaneous Location and Mapping(SLAM) problem on Mobile Devices
- Designed Mobile GPU oriented computer vision algorithms for the Structure Sensor, and Kinect 3D Cameras
- Lead a team of 4 other researches to build autonomous hexacopters using this technology.
- Focus was to enable large scale dense 3D Scanning and analysis of Natural Environments.
- Competing in Intel Cornell Cup with this Technology
- Also developed a robust and specialized SLAM technique to improve deep brain stimulation surgery

Evaluation of multicore & GPU performance in Open Computing Language (OpenCL)
- Constructed OpenCL kernels based on computer vision and machine learning algorithms to explore variations in performance of architecture pipeline and hardware resource requirements of parallel hardware
- Investigated the performance characteristics, implementation, and structure of OpenCL kernels on field programmable gate arrays (FPGAs) using the Altera OpenCL SDK
- Developed a parallelized multiple-actor, multiple goal, path-finding algorithm using SIMD support and compared tradeoffs with OpenCL implementations.

Engineering & Software Skills

- Linux development and administration experience
- Software development in C++, Python, Bash, Assembly, Lua, Arduino, Matlab, LaTeX, HTML5, Javascript
- Architecture background in parallel processing on General-Purpose Graphics Processor Units (GPGPU)
- Parallel programming support OpenCL, CUDA
- Assembly coding (RISC and x86), experience with specific support for ARM vectorization and SIMD
- Open Graphics Library (OpenGL/ES) and Open Computer Vision (OpenCV)
- Extensive experience with Mobile GPU architectures (Adreno, PowerVR, Tegra)
- SOC/FPGA-embedded system design using Altera Quartus (Verilog, SystemVerilog, Modelsim, OpenCL SDK)
- Schematic design and PCB layout in Orcad, Eagle, LT-Spice
- Code sharing with git and perforce version control system
- Programming IDEs: Visual Studio, Eclipse, Xcode, QtCreator and Code::Blocks.
- Programming Language Development using: Yacc, Bison, LLVM

Work Experience

- Qualcomm (Engineering Intern, GPUCS Team),   May 2014 - August 2014
- Argon Software (Founder),   Jan. 2010 - Present
- University of Colorado Denver (Undergraduate Research Assistant),   May 2013 - Present

Honors & Affiliations

- Qualcomm Qualstar: Emerald Award (Employee of the Month)
- Undergraduate Research Opportunity Grant recipient
- Intel-Cornel Cup Finalist
- Tau Beta Pi Member