Andrew Zhong

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Education

University of California, Berkeley – Berkeley, CA
Master of Engineering in Computer Science, Visual Computing and Computer Graphics — May 2014

University of Illinois at Urbana-Champaign – Urbana, IL
Bachelor of Science in ECE with *Highest Honors*, Overall: 3.89/4.0, Technical: 3.92/4.0 — May 2013

Related Coursework:
Algorithms, Data Structures, Computer Graphics, Computer Vision, Machine Learning, Parallel Computing, Operating Systems, Computer Architecture, Web Development, Database, Leadership

Skills

Languages: Java, C/C++, Python, OpenGL, CUDA, HTML, CSS, Ruby, JavaScript, SQL, VHDL, Verilog, x86
Applications: Android, Google App Engine, OpenCV, Kinect, Eclipse, Git, MATLAB, ModelSim, Blender

Experience

Qualcomm Research – Augmented Reality (Prof. Björn Hartmann), Santa Clara, CA Sep 2013 - Present
- Create an Android AR application with OpenGL ES 2 and Qualcomm Indoor Navigation APIs
- Overlaid 3D graphical map objects on the camera view based on location and orientation

Qualcomm Inc. – Graphics System Design Intern, San Diego, CA — May – Aug 2013
- Initiated and developed text processing and pattern matching tools for massive netlist and log files
- Performed MIPI DSI (Display Serial Interface) modeling and video stream simulations

Coordinated Science Laboratory – Diagnosing Performance Violations at System Level Using Data Mining (Prof. Shobha Vasudevan), Urbana, IL — Oct 2012 – May 2013
- Localized the latency and throughput violations using a concurrent pattern mining approach
- Applied domain knowledge to filter out up to 92.8% of transaction traces, increasing mining efficiency

Beckman Institute – Brain-controlled Programmable Embedded System, Urbana, IL — Jan – May 2013
- Designed an EEG-signal-controlled tablet prototype with ~2.5 s response time and 95% reliability
- Earned Research Award in Senior Design Hall of Fame

Qualcomm Inc. – Algorithm and System Design Intern, San Diego, CA — Jun – Aug 2012
- Implemented the color processing algorithm based on 3D look-up table gamut mapping for Mirasol
- Optimized memory placement algorithm and reduced look-up table size by a factor of 4

Projects

Augmented Object Detector - Android App, CS Berkeley — Sep 2013 – Present
- Detected objects from Android camera video stream with Haar training
- Rendered the detected objects in a 3D virtual scene on top of camera view with OpenGL ES 2

Operating Systems, CS Berkeley, ECE UIUC — Jan 2013 – Present
- Developed a multi-threaded HTTP server that supports asynchronous IO and thread-safe caching
- Built a Linux-based OS in C and x86: paging, interrupts, system calls, program loader, page allocator, multiple terminals, scheduling, signals, sound and mouse support, shell extensions and GUI
- Achieved 4th place out of 30 teams in the Microsoft Operating System Design Competition

Computer Graphics and Computer Vision, CS Berkeley — Sep – Nov 2013
- Coded in C++ from scratch: a ray tracer that implements Phong shading, refraction and .obj file inputs
- Developed in OpenGL: uniform subdivision, adaptive tessellation, obj & mtl inputs, vertex shading
- Explored homography rectification, 3D reconstruction, edge detection, texture and digit recognition

Pipelined Processor Design, ECE UIUC — Sep – Dec 2012
- Designed and verified datapath, control and cache of a 5-stage pipelined processor based on LC3b
- Achieved 2nd place out of 22 teams in the AMD Processor Design Competition

Publications

"Diagnosing Root Causes of System Level Performance Violations", ACM/IEEE ICCAD 2013
"Troubleshooting Performance Violations at System Level Using Data Mining", Poster at DAC 2013

Honors

Eta Kappa Nu, Tau Beta Pi, National Society of Collegiate Scholars, IEEE, SIAM
Highest Honors at Graduation, O. Thomas and Martha S. Purl Scholarship, Dean's List
First Prize in National Physics Contest in Jiangsu, China, 2007