Karl Ostmo

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EDUCATION

Master of Science, Electrical and Computer Engineering
Purdue University, West Lafayette, Indiana
Graduated May 2009, GPA: 3.5 / 4.0
Thesis: *Automatic portion estimation in mobile dietary assessment*

Bachelor of Science, Electrical Engineering
University of North Dakota, Grand Forks, North Dakota
Graduated December 2006, GPA: 3.85 / 4.0
Concentration: Computer Science; Minor: Mathematics

COURSEWORK

Graduate Level: Biomedical Imaging; Visualization Techniques; Computer Vision; Artificial Intelligence; Computational Models and Methods (Algorithms); Random Variables (Probability Theory); Digital Image Processing; EMI/EMC
Undergraduate Level: EM Fields I & II; Transmission Line Theory; Signals and Systems; Control Systems; Microprocessor Hardware; VHDL

SKILLS

Languages: Python, Java, JavaScript, C, shell scripting (Bash), LabVIEW, C++, MATLAB, SQLite; *from isolated projects:* PHP, Perl, Tcl, POV-Ray
APIs: Android, OpenCV (C, Python), OpenGL, GTK+ / PyGTK GUI Toolkit, Cairo vector graphics library, MatPlotLib plotting library, Eclipse JDT plugins, Google App Engine (Python), Firefox extensions/XUL
Applications: Subversion, Git, LaTeX, Mathematica, LAMP, MathCAD
Hardware Experience: Analog Devices' Blackfin, Motorola 68HC11, Atmel ATMega, Xilinx Spartan III
General: strong technical & general communication ability, customer interaction & requirements capture, Linux system administration, graphics

EXPERIENCE

Freelance   Summer 2009–Summer 2010
Android Developer
- Developed several applications for download or purchase on Android Market including a Flickr interface, Japanese study aid, Wikipedia editor, species taxonomy browser, and charting/graphing utility
- Designed and implemented database schema, multithreaded user interface, custom widgets and graphical components for each
- Integrated customer feedback into development cycle

Purdue Rendering & Perception Lab   West Lafayette, IN   2007–2009
Graduate Research Assistant
- Computer Vision on mobile devices
- User interface design with GTK in Python, C, and C++
- Captured research customer requirements, implemented prototypes
- Interfaced with Oracle and PostgreSQL databases from C++
- Realtime map tracking with OpenVG and OpenGL on Win32

IBM Extreme Blue   Austin, TX   Summer 2008
Technical Intern

- Architected and implemented a multi-host webcam-based calibration and 3D reconstruction system (C++, OpenCV, GTK+)
- Assumed a leadership role in resolving project scope issues and delivering a successful product and conference presentation
- Evaluated as above average among elite interns

Hitachi GST   Rochester, MN   January–August 2007
Adv. Tech. Firmware Engineer

- Developed a graphical Discrete Event Simulator for hard disk seek algorithm prototyping
- Created animated algorithm illustrations and benchmark visualizations to demonstrate efficiency gains
- Implemented new algorithms in firmware, developed GUI firmware testing suites in Python, Tcl

NASA Jet Propulsion Laboratory Pasadena, CA Summer 2005
Engineering Intern   Summer 2006

- Developed LabVIEW instrumentation / control software for Subsurface Ice Probe
- Co-developed new liquid level-sensing technology
- Implemented drivers and tracking algorithms for a gimballed laser transceiver in LabVIEW

MAJOR PROJECTS

jobfeed: a distributed, skill-matching, geo-aware job search engine (2010)
- JavaScript Google Maps UI, Python Google App Engine backend

Embedded People Counter: Undergraduate capstone project (2005–2006)
- Implemented camera-based object detection and people counting on Blackfin dual-core combination DSP/Microcontroller

pyrocket: (2008)
- Reverse engineered communications protocol for control of several novelty USB foam dart launchers
- Packaged for and accepted into Ubuntu 9.04 software repositories

OPEN SOURCE INVOLVEMENT

Android Open Source Project: (2009–2010)
- Contributed significant features to the Eclipse development tools
- Collaborated with technical lead in code review and patch submission

OpenCV: Open Computer Vision Library (2007–2009)
- Contributed bug reports, patches, wiki documentation

OTHER INTERESTS

robotics, economics, natural language processing, steel pan, guitar