



**J. Rhett Aultman**  
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## SKILLS

- **BSP / Driver / Kernel Development:** Windows Mobile (6 and 7), Windows CE, Linux, Minix
- **Data Stack Implementation / Network Protocols:** IP, TCP, UDP, 802.3 (Ethernet), 802.11 (Wifi), network theory
- **Microcontrollers:** TI OMAP, Parallax SX, Atmel AVR, Arduino
- **Programming Languages:** C, C++, assembly (ARM, x86, and SX), Java, Processing, C#, Perl, Python
- **Hardware Virtualization:** VMWare, Xen
- **Process Virtual Machines / Simulation:** JVM implementation, garbage collection algorithms, hardware simulator implementation
- **Compilers:** compiler design and implementation, flex, bison, ANTLR

## PROFESSIONAL EXPERIENCE

### Motorola—Feb 2006-Present

#### Sr. Software Engineer

- **BSP / Driver Development:** Developed, maintained, debugged, and improved a number of critical drivers and BSP features, including bootstrapping of baseband processor, real time clock management, image update applications and drivers, network stack, and power management for the Motorola Q9h smartphone. Developed processes for testing and validating championed features.
- **Intellectual Property Development:** One of the principal engineers responsible for developing new intellectual property with respect to power management. Patent applications have been filed for this work.
- **Performance Tuning and Testing:** Principal engineer in charge of data throughput analysis. Participated in efforts to reduce power drain. Advised on performance issues related to SD card performance and data stack throughput.
- **Test & Debug Tool Development:** Led development of critical baseband communication logging tools. Produced tools for debugging features on an as-needed basis. Maintained and became owner of postmortem debugging tools.

### Google—May 2005-August 2005

#### Software Development Intern

- **Development of Google Talk:** Used experience with C++, Java, and the XMPP protocol to develop critical features of Google Talk servers, with a focus on bypassing firewalls, XMPP spec compliance, server interoperability, user privacy policies, secure handling of SSL certificates, and additional features.
- **Google Talk Feature Test:** Developed a series of tests to validate the performance of Google Talk features.

### CISE Department, University of Florida—January 2004-December 2006

#### Teaching Assistant

- **Development of Minix OS:** Designed mandatory student projects involving expansion of the Minix operating system. Curriculum development involved designing and implementing changes to the Minix kernel, creating test harnesses and grading systems, and serving in the senior position on the teaching assistant staff.
- **Teaching:** Delivery of course material in weekly discussion sections and tutoring students during office hours.
- **Staff Management:** Coordination and supervision of teaching staff activities as course supervisory teaching assistant.

### FCCI Insurance Group—October 2001-December 2003

#### Applications Software Developer II

- **Applications Development:** Developed significant portions of IT infrastructure, including company-wide workflow engine and advances models of company relationships.
- **Open Source Evangelist:** Designed best practices and viable technological strategy involving available open source enterprise technology. Led in media campaigns for advocacy of open source practices.

- **Open Source Liaison:** Representation of company's interests to the developer communities of evangelized open source technologies.
- **Presenter of Emerging Technology:** Demonstration of emerging technology and programming models to the developer community through regular presentations at user groups.

## RESEARCH / PROJECTS

### Operating Systems, Virtual Machines, and Data Management

- Fine-grained mobile handset power management through network data flow analysis (development of Motorola Q9h, patent pending)
- Study of techniques for guest VM suspend/resume triggered by network traffic (Term project, EEL6892: Virtual Machines)
- Development of a single-user RDBMS, including disk and memory management, metadata management, and query execution engine, including test system to validate behavior and scaling of up to billions of records (Term project, CEN6726: Database System Implementation)
- Real-time profiling of the Java Virtual Machine (Published in Java Developer's Journal)

### Hardware design, Microcontrollers, and Microprocessors

- Thorough study of the XGameStation Pico and supporting lab curriculum with a focus on design of hardware critical to the development of a simple video game console based on the Parallax SX28 (<http://tristated.weatherlight.com>)

### Programming Languages, Compilers, and Language Tools

- Development of compiled, statically typed programming language for image manipulation (Term project, COP5555: Programming Language Principles)

### Distributed, Federated, and Peer to Peer Systems

- Development of efficient decentralized job scheduling algorithms in a P2P distributed computing environment (<http://www.grid-appliance.org>)

## PUBLICATIONS

- "JVMPI: Java Virtual Machine Profiling Interface" Java Developer's Journal 8(2) 2003, pp. 30-34  
 "XML and IM: Instant Messaging With Jabber" XML Journal 3(7) 2002, pp. 16-17

## PROFESSIONAL PRESENTATIONS

- JINI Distributed Network Services* Suncoast Java Users' Group, Sarasota, FL, October 2002  
*Aspect Oriented Programming* Suncoast Java Users' Group, Sarasota, FL, January 2003  
*JNI and JVMPI: Native Code in Java* Suncoast Java Users' Group, Sarasota, FL, February 2003

## EDUCATION

### University of Florida, CISE Department

MS in Computer Engineering, August 2008

### University of Florida, Warrington College of Business Administration

BSBA in Computer Science, May 2001

## ADDITIONAL INTERESTS

**Video Production:** Production, shooting, editing, and digital effects for documentaries, tutorials, sales / promotional videos, interviews, and sporting events. Use of Adobe Creative Suite.

**Amateur Radio:** Licensed for amateur radio at the Technician level. Licensed callsign: KI4FWY