

Tim Gorton

Summary

I am a **hands-on, multi-disciplinary software engineer**, with expertise **from web servers to circuit boards** and **proven hands-on team leadership**. I have proven experience in the architecture and implementation of complex, multi-platform distributed systems, with a focused, “get-it-done” attitude to drive products into the market and iterate quickly to respond to evolving customer needs.

Core Competencies

- **Team Leadership:** hands-on technical management of a software engineering group as well as a multi-disciplinary engineering department. Very active in product definition, architecture, implementation, and debugging. Hired, managed, and mentored highly talented software and hardware engineers.
- **Technologies:** web and server system architecture, embedded system design and implementation, data collection and analysis, RF and infrared communications and protocol design, power management, LAMP web systems, some Linux administration.
- **Software Development:** Java, PHP, MySQL, PostgreSQL, SQLite, C, microcontroller assembly, some shell scripting, and several custom embedded scripting languages. Worked in Linux, Windows, and uC/OS II real-time operating system.

Employment History

nTAG Interactive, Boston, MA – *wearable PDA-like nametags for event data management*

Director of Engineering: June 2008 – December 2008 (company ceased operations)

Head of nTAG engineering department, responsible for the software and hardware development and manufacturing of nTAG’s wearable computer system, including the tag device, access points, servers, and other supporting devices. The department consisted of 6 full-time employees and 4 part-time employees, including server software development, tag software development, QA, and hardware development and manufacturing.

- Led effort to define, architect, and scope 3rd generation device and server product, including key component and vendor research. Led construction of two generations of functioning prototypes and personally performed software bring-up on prototype devices. Made substantial contributions to product vision and rallied other stakeholders within company around that vision.
- Led team to overcome reduction in team size and successfully execute the final two major software releases for 2nd generation product.

Software Development Manager: January 2005 – June 2008

Built a highly successful team of 4 software engineers with responsibility for the design and implementation of software for 2nd generation nTAG hardware device as well as supporting embedded devices.

- Key architecture contributor in a variety of software and hardware system projects, including distributed database synchronization, RF communication protocol design (MAC layer, reliable transport, and application protocols), access point design, infrared communication between tags, inter-processor communication protocols, power management systems, design of novel applications for wearable computers, and high-power infrared beacon hardware.
- Design, implementation, and debugging of software on ARM7 and TI MSP430 embedded processors, including radio & infrared communication protocols, scripting language virtual machines & compilers, application logic, low-level infrared communication, SQL database integration with our scripting language, and many others. Also contributed to associated Java and C programs on desktop PC’s.

Senior Software Engineer: June 2003 – December 2004

Technical lead of software development for the 1st generation nTAG system, coordinating design and implementation for a team of 4 developers. Ongoing support of clients and end-users during pre-event preparation and on-site deployment, including primary technical responsibility for approximately 20 successful client events.

- Led design and implementation of TI MSP430 embedded software, including radio and infrared communications, data management, application infrastructure, and user-facing applications.
- Contributed to design and implementation of Java RFID server application and PHP/MySQL web application for kiosks and event management, including configuration and reporting web UI’s and business logic.
- Success of the 1st generation nTAG system led to nTAG securing venture funding.
- 2nd employee after two co-founders, 1st full-time technical employee

Employment History (continued)

MIT Media Lab, Grassroots Invention and Lifelong Kindergarten Groups, Cambridge, MA

Graduate Research Assistant: February 2002 – May 2003

- Designed and implemented a “Tabletop Process Modeling Toolkit” using embedded controllers, networking firmware, and desktop visualization software for M.Eng thesis work.
- Supervised two undergraduates working on embedded virtual machines and desktop software.

MIT Undergraduate Research Opportunities Program: February 1999 – January 2002

- Senior architect and developer of a seven-member team that implemented a system of tradable “information balls” on Sega’s Virtual Memory Units, used by hundreds of children and adults at a conference and a Cambridge, MA elementary school. Project involved Java client and server applications, a database, serial communications, and embedded programming.

Trilogy Software, Austin, TX – *enterprise software development*

Engineering Intern, Summer 2001

- Designed, implemented, developed automated tests and documented a distributed, parallel batch processing system for an enterprise-level financial services application suite in Java, including integration with multiple existing data processing engines to improve performance and scalability.

Kana Communications, Redwood City, CA – *web-based customer relationship management*

Engineering Intern, Summer 2000

- Design, prototyping, and initial implementation of a lightweight component-based development architecture in Java for Kana’s next-generation inbound email handling desktop/web system.

Education

Massachusetts Institute of Technology, Cambridge, MA

Masters of Engineering in Electrical Engineering and Computer Science, June 2003.

Thesis work in the MIT Media Lab’s Grassroots Invention Group, titled “Tangible Toolkits for Reflective Systems Modeling” GPA: 4.9/5.0

Massachusetts Institute of Technology, Cambridge, MA

Bachelor of Science in Computer Science and Engineering, June 2002. GPA: 4.9/5.0

Recent Personal Projects

- **Fraternity Alumni LAMP Web System (2005-present):** Web system including credit card donation processing, an alumni database, user-administered mailing lists, and a wiki. System uses Amazon S3 for data storage, as well as Google Maps and Graphs API’s for visualization.
- **Apartment Building LAMP Web System (2009):** Web system built on CakePHP framework to show dynamic unit availability, provide lead generation, and manage building tenants.
- **Adobe Flash/Flex Visualization App for Non-profit Children’s Technology Center (2009):** Application showed images and text of children’s projects based on XML data feeds, including XML-based authentication with server system.
- **Interactive Advertising LAMP Web System (2009):** Prototype web system for a colleague’s startup concept providing configuration web UI, XML data feed for Flash application, and VoiceXML interface for IVR phone system.

Patents

- **Method of scoring the performance of attendees at a meeting.** Listed as 2nd Inventor. Patent pending: published application #20060195354.
- **Enhancing Face-to-Face Communication.** Patent pending: published application #20070236334.

Publications

- Tim Gorton, Bakhtiar Mikhak. **A tangible architecture for creating modular, subsumption-based robot control systems.** Extended Abstracts, CHI 2004.
- Tim Gorton, et al. **Tabletop Process Modeling Toolkit.** Demonstration, CSCW 2002.
- Richard Borovoy, Brian Silverman, Tim Gorton, et al: **Folk computing: revisiting oral tradition as a scaffold for co-present communities.** CHI 2001: 466-473

Personal

- **Volunteer Mentor** at the Boston Museum of Science’s Computer Clubhouse, an after-school center that encourages disadvantaged youth to use technology creatively, weekly since January 1999.
- **Volunteer Alumni Treasurer** of ΑΔΦ at MIT since 2006: managing our chapter’s ~\$330,000 annual budget and involved in numerous other issues as a member of our chapter’s alumni board of trustees.