

Jeffrey R. Blum
jeffbl@alumni.princeton.edu

4382 Harvard Avenue
Montréal, QC H4A 2X1
514-664-8758 (Canada)
914-614-7632 (USA)

SYNOPSIS

Software Developer, Program Manager, and entrepreneur with a B.S.E. in Computer Science (Princeton University) and over 15 years of software design, project management, and development experience in a large company (Microsoft), startups, and academia, with an emphasis on mobile software design and development. USA citizen and Canada Permanent Resident.

EDUCATION

Princeton University, B.S.E. Computer Science, *magna cum laude*, 1994
McGill University, French for Professional Communication certificate program, 2011

EXPERIENCE

McGill University, Montréal, Canada: Research Assistant (Nov. 2008-present)

- Lead developer and project manager for In Situ Audio Services (ISAS), implementing an iPhone application that renders points of interest surrounding a blind individual by using spatialized audio, in C++ for cross-platform compatibility (anticipating eventual Android port), Objective-C for iPhone-specific functionality, and libpd (a Pure Data library) to run audio spatialization PD patches. Project funded by both Google Research and the Québec Secrétariat du Conseil du trésor.
- Project manager for McGill's deliverables of the Health Services Virtual Organization (HSVO) project. Assessed technologies such as the video streaming performance of Adobe Flash, Theora, VLC/x264, and a Wowza streaming server for incorporation into a camera array system used for remote viewing of cadaveric dissections. System currently deployed at the McGill Medical Simulation Centre.
- Modified and debugged underwater camera remote control software (written in Java) to use Moxa IP to serial hardware for the Oceans 2.0 project based at the University of Victoria; optimized performance of system, culminating in successful control of remote hardware.
- Technical contributions and project management for many other lab activities, ranging from World Opera, which involved opera singers and a conductor performing live, but with audio and video latency simulated as if they were located in different cities around the globe, to a portable gaming device for treating amblyopic children. Editing and authoring sections of grant proposals submitted to NSERC, Google, and other funding agencies.

FullMeasure.org (personal project, currently offline) (2006-2008)

- Conceived, designed and implemented web application to provide a neutral clearinghouse for quantitative investment ratings based on non-financial measures such as environmental impact, social responsibility, and religious beliefs. Implemented site using Ruby on Rails, Netbeans IDE, MySQL database, Perl (for data gathering and parsing from the web), and Capistrano deployment to an Ubuntu Linux server.

Glass Lantern, LLC, Washington, DC (2002-2007)

- Founded Single Member Limited Liability Company focused on creating mobile software for professional photographers; designed and implemented entire product line in C/C++/Win32.
- Pocket PC products: PocketLoupe, a positively reviewed image viewer that reads information from RAW (camera proprietary) images; Pixfer, a mobile image management tool; CalTrack, a weight loss application.
- Pixfer XP, a multithreaded Windows XP version of the Pocket PC Pixfer program.
- Windows Mobile SmartPhone port of CalTrack calorie tracker, plus a pack of small SmartPhone utilities.

MindSurf Networks, McLean, VA: Director of Product Design (2001)

- Managed Product Design team including Art Director, two Graphic Designers, and an Experience Designer.
- Oversaw design aspects of the Mindsurf Achievement Essentials product suite, which allowed students and teachers to collaborate via handheld computers in a wireless networked environment. Responsible for design specifications and user workflow documentation.

Microsoft Mobile Electronics Group, Redmond, WA: Lead Program Manager (1994-2000)

- Oversaw all aspects of Pocket Outlook software (Calendar, Contacts, Tasks, Note Taker) for three full product cycles: Handheld PC (released 8/1996), Palm-size PC (released 3/1998), and Pocket PC (released 3/2000).
- Directed first version of desktop personal information management (PIM) synchronization software.
- Drove components from initial design through final release, including determining user requirements and feature set, designing features, developing prototypes and storyboards, writing specifications, soliciting and incorporating usability and design feedback, setting schedule, and leading bug triage.
- Managed temporary staff and the Program Manager responsible for email functionality.
- Worked directly with product planners and technical staff at companies such as Hewlett-Packard, Casio, Compaq, and LG

- Electronics to define product requirements and resolve feature/technical issues.
- Oversaw/specified additional components at various points: Hardware requirements for OEMs, Shell & navigation, Pocket Word, Email, Calculator, physical keyboard design, and user notification system.

NeXT Computer, Inc., Redwood City, CA (various 1991-1994)

- NeXT Campus Consultant responsible for technical/sales support for Princeton University.
- Summer internship at NeXT headquarters: technical assistant in the Higher Education Marketing department.

TECHNICAL KNOWLEDGE

C programming, C++, Linux, Ubuntu, UNIX, Microsoft Windows, Subversion (SVN), iPhone (iOS) programming, Xcode, Windows Mobile (Windows CE), HTML, Objective-C, Win32 API (incl. Windows Mobile), NeXTSTEP

OTHER ACHIEVEMENTS, ACTIVITIES & KNOWLEDGE

- Inventor on issued US Patent numbers: 5805164, 6593949, 6633924, 6664991, 6727917, 6727830, 6760696, 6819315, 6901559, 7411582, 7533352, 7669208, 8066372
- Co-authored position paper accepted to ACM CHI '97 Issues in Wearable Computing workshop.
- Affiliate Member of McGill's Centre for Interdisciplinary Research in Music Media and Technology (CIRMMT).
- Former volunteer website contributor for the open source Tor Project.

PUBLICATIONS / PRESENTATIONS

1. *What's around me? Spatialized audio augmented reality for blind users with a smartphone.* Blum, J.R., Bouchard, M., and Cooperstock, J.R. 2011, Copenhagen, Denmark, December. Main track accept rate 28%. (BEST PAPER AWARD)
2. *Hearing Neon Signs: Spatialized Audio Augmented Reality for Blind Users.* Invited talk, Interacting with Sound Workshop, Mobile HCI 2011, Stockholm, Sweden, September.
3. *End-user viewpoint control of live video from a medical camera array.* Blum, J.; Sun, H.; Olmos, A.; and Cooperstock, J. R. 2011. International Conference on Distributed Smart Cameras, August.
4. *A game platform for treatment of amblyopia.* To, L.; Thompson, B.; Blum, J.; Maehara, G.; Hess, R.; and Cooperstock, J. R., 2011. IEEE Transactions on Neural Systems and Rehabilitation Engineering.
5. *Exploring the role of latency and orchestra placement on the networked performance of a distributed opera.* Olmos, A, Brulé, M., Bouillot, N., Benovoy, M., Blum, J., Sun, H., Lund, N.W., and Cooperstock, J.R., 12th Annual International Workshop on Presence, Los Angeles, Nov. 11-13, 2009.
6. *Did Minority Report Get it Wrong? Superiority of the Mouse over 3D Input Devices for a 3D Placement Task.*, Bérard, F., Ip, J., Benovoy, M., El-Shimy, D., Blum, J.R. and Cooperstock, J.R., IFIP TC13 Conference in Human-Computer Interaction (INTERACT), Uppsala, Sweden, August 24-28, 2009.