Barak Shechter

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Key Qualifications

- Software, web, mobile and database developer: server-side and front-end, signal generation/acquisition, data analysis/management, audio/video processing and compression, cellular communications
- Formalizing complex problems, quantifying relevant variables, creating mathematical models, and simulating scenarios
- Innovating and implementing novel, application-specific data analysis and statistical techniques
- Excellent communicator: 12 peer-reviewed publications, 1 book chapter, 8 seminars, and 17 conference presentations

Representative Skills

Development	C/C++, Java SE/EE, SQL, MATLAB, Perl, Python, HTML, PHP, CSS, JavaScript, ASP, LaTeX
Technologies	Amazon Web Services, Apache Tomcat, Spring, AOP, Hibernate, Hazelcast, ActiveMQ, AJAX, JSP, JNI
Analytical	Statistical Analysis, Linear/Nonlinear Modeling, Information Analysis, Machine Learning
Technical	Signal Generation and Acquisition, Hardware/Software Interfacing, Experimental Physiology
Platforms	Linux/UNIX, Microsoft Windows, MacOS X, Android OS, Adobe Creative Suite, Microsoft Office
Languages	Fluent in English and Hebrew; proficient in Spanish, Portuguese, German

Work Experience

December 2012 – Present

Senior Software Developer, DSP Research Scientist   **Triplay, Inc., New York, NY**

Server-side developer for MyMusicCloud online music platform.

Designed acoustic fingerprint methodology · created server-to-server application layer interface and messaging system · redesigned backend billing platform and integrated with providers such as PayPal and Braintree · migrated operations to Amazon Web Services platform · optimized and extended existing codebase.

July 2011 – Nov 2012

Faculty Research Scientist   **University of Maryland, College Park, MD**

Led research on the neural processesing and encoding of sound in the mammalian brain with a focus on speech, speech in noise, and the neuropathology of hearing disorders (Tinnitus).

Coded software for data acquisition, storage, and analysis · conceived and implemented novel methods for quantitative data analysis · created and tested rigorous mathematical models of the auditory system.

May 2009 – June 2011

Postdoctoral Fellow   **University of Maryland, College Park, MD**

Led research investigating the pattern in which connections are formed between neurons in the brain from birth through adolescence using laser photostimulation.

Programmed software-hardware interfaces to control laser stimulator and data acquisition system · coded software for experimental control, data acquisition, analysis, mining, and visualization · innovated and coded complex mathematcial analysis methods · created and tested models of neural development.

June 2004 – May 2009

Doctoral Candidate   **University of Maryland School of Medicine, Baltimore, MD**

Designed, implemented, and executed research to model the high-level processing of sound performed by the mammalian brain, with a focus on auditory feature extraction and source generalization.

Coded software for signal generation, data acquisition, analysis, mining and visualization · created novel stimuli to probe the auditory system · innovated tailored statistical methods for data analysis · created mathematical models of the auditory system · maintained laboratory website.

October 2003 – January 2004

Software/Web Developer   **Vertistry, Inc., New York, NY**

Optimized database search algorithms and implemented web interfaces for a turnkey database management suite and front-end search platform.

January 2003 – October 2003

Software Developer   **ControlID, Ltd., Tel Aviv, Israel**

Designed and implemented a database system with a custom software interface for information management and communication with embedded controllers over cellular networks.

August 2001 – March 2003

Software Developer/Team Leader   **Israeli Defense Forces**

Designed and implemented a software suite for database management that interfaced with a low-level control system and expedited workflow processes.

Education

PhD, Anatomy and Neurobiology, Computational Auditory Neuroscience   University of Maryland

BA, Computer Science   Open University of Israel