

Eugene Weinstein

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EDUCATION

- 09/05-
PRESENT **New York University**, New York, NY.
Ph.D. in Computer Science, expected 2009.
- 08/96-06/01 **Massachusetts Institute of Technology**, Cambridge, MA.
M.Eng. in Electrical Engineering and Computer Science, June 2001.
S.B. in Computer Science and Engineering with minor in Economics, June 2000.
- 09/93-06/96 **Stuyvesant High School**, New York, NY.

EXPERIENCE

- 05/06-
PRESENT **Google Inc.**, New York, NY
Summer Intern; Part-time School Year Intern
For the speech recognition group of the top search and information access company, undertake several research efforts. Develop a novel music identification approach that automatically learns a set of “music phonemes” as well as an acoustic model for each phoneme, and uses finite state transducers (FSTs) for efficient indexing and retrieval. Research state-of-the-art techniques for indexing large speech corpora. Apply a topic analysis algorithm to a large corpus of broadcast-news quality speech with the goal of improving the company’s speech indexing products. Demonstrate an improvement in topic segmentation quality by using word lattices and confidence scores in addition to the one-best speech recognition hypothesis. Use C++, Perl, and Python on Linux. Make extensive use of Google technologies such as MapReduce, Bigtable, SSTable and the distributed computing infrastructure.
- 09/01-08/05 **MIT Computer Science and Artificial Intelligence Lab.**, Cambridge, MA
Research Scientist
For a top university computer science research lab, contributed to multiple technologies being developed in a lab-wide pervasive computing project. Researched computer vision algorithms for face detection and face recognition on handheld devices. Continued development of the SPEECHBUILDER toolkit. Researched acoustic beamforming algorithms for microphone arrays. Developed and deployed the world’s largest microphone array and beamformer, as recorded by the Guinness Book of World Records (2007). Lectured in graduate-level courses and in technology transfer workshops for industry affiliates. Supervised undergraduate and graduate students in research projects. Used C/C++, Java, Perl, Python, and MIPS Assembly extensively on Windows, UNIX, and several Linux variants.
- 05/00-06/01 **MIT Lab. for Computer Science**, Cambridge, MA
Graduate Researcher
For a leading speech recognition research group focused on providing universal access to online information, conducted research with the goal of simplifying the development of spoken dialogue systems. Designed, built, and maintained SPEECHBUILDER, a system to allow a developer with little or no expertise in speech recognition to configure all aspects of a speech-enabled application by using a simple web interface. Used Perl and C/C++.
- 06/99-10/99 **SpeechWorks International (now Nuance Communications, Inc.)**, Boston, MA
Full-time Summer Intern; Part-time Employee
For a leading provider of automated speech recognition solutions, played a key role in the design and prototyping of SpeechSite, a revolutionary environment for creation and maintenance of spoken dialogue systems.
- 06/98-08/98 **Goldman, Sachs & Co.**, New York, NY
Full-time Summer Intern

For an industry-leading investment banking and securities firm, worked in the information security department on a mainframe automation project. Added operations to a web-based access request system as part of a move from manual to real-time request processing. Used Perl/CGI.

09/97-01/98 **World Wide Web Consortium**, Cambridge, MA

Part-time Undergraduate Researcher

For the sole developer of web standards and protocols, worked in a group investigating the possibility of distributing the load on a heavily used single-machine web cache over multiple machines via a persistent hashing scheme. Wrote software to perform analysis of hashing algorithms to be used for load balancing. Used Java and Scheme.

06/97-08/97 **Data General Corporation (now EMC Corp.)**, Westboro, MA

Full-time Summer Intern

For a systems company specializing in servers and storage products, analyzed performance of Internet proxy servers to determine the best algorithm for caching content in company's own server products. Used Java and Perl.

SELECTED
PUBLICATIONS

M. Mohri, P. Moreno, and E. Weinstein. General Suffix Automaton Construction Algorithm and Space Bounds. To Appear in Theoretical Computer Science.

M. Mohri, P. Moreno, and E. Weinstein. Robust Music Identification, Detection, and Analysis. International Conference on Music Information Retrieval (ISMIR), September 2007, Vienna, Austria.

M. Mohri, P. Moreno, and E. Weinstein, Factor Automata of Automata and Applications. International Conference on Implementation and Application of Automata (CIAA), July 2007, Prague, Czech Republic.

E. Weinstein, K. Steele, A. Agarwal, and J. Glass, LOUD: A 1020-Node Microphone Array and Acoustic Beamformer. International Congress on Sound and Vibration (ICSV), July 2007, Cairns, Australia.

E. Weinstein and P. Moreno. Music Identification with Weighted Finite-State Transducers. International Conference on Acoustics, Speech, and Signal Processing (ICASSP), April 2007, Honolulu, Hawaii

T. J. Hazen, E. Weinstein, B. Heisele, A. Park, and J. Ming. Multi-Modal Face and Speaker Identification for Mobile Devices. In R. I. Hammoud, B. Abidi, and M. Abidi, eds., Face Biometrics for Personal Identification: Multi-Sensory Multi-Modal Systems, Springer-Verlag, Heidelberg, Germany, April 2007.

J. Glass, E. Weinstein, S. Cyphers, J. Polifroni, G. Chung, and M. Nakano. A Framework for Developing Conversational User Interfaces. In Proceedings, Computer-Aided Design of User Interfaces (CADUI) 2004, January 2004, Island of Madeira, Portugal.

J. Glass and E. Weinstein. SPEECHBUILDER: Facilitating Spoken Dialogue Systems Development. In Proceedings, Eurospeech 2001, September 2001, Aalborg, Denmark.

SKILLS

Computer Languages: C/C++, Java, Perl, Python, Lisp/Scheme, x86 and MIPS Assembly, Tcl, CGI, ASP, PHP, HTML, SQL, Pascal, Basic.

O/S: Linux, Windows, MacOS, SunOS, Solaris.

AWARDS

NYU GSAS MacCracken Fellow (funding for PhD studies)

NYU GSAS Doctoral Dissertation Fellow (awarded to advanced doctoral candidates to recognize excellence and promise)

ICASSP 2007, best student paper finalist.

ACTIVITIES &
OTHER

Fluent in Russian, proficient in Mandarin Chinese, basic knowledge of Hebrew. MIT Heavyweight Crew, 1996-2000, Varsity Captain, 1999-2000 season; Bronze Medal in Club Single event at 2003 Head of the Charles Regatta. Enjoy squash, skiing, skating, rollerblading, hockey, running, scuba diving.