

# Adam B. Goldstein

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## Education

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**Worcester Polytechnic Institute**  
*MS in Computer Science*

September 2009 - May 2011  
Worcester, MA

- Developed for ASSISTments, an Intelligent Tutoring System primarily used for Math.
- Awarded the NSF GK-12 PIMSE Fellowship, which funds graduate students to serve as an assistant teacher and "scientist in the classroom" for local Worcester, MA middle schools to advocate for STEM careers.
  - Ran an after school Computer Club and assisted with the Math Team.
- Conducted and published Educational Data Mining and Artificial Intelligence in Education research.
  - Baker, Ryan, S.J.d, **Goldstein, Adam B.**, Heffernan, Neil T.: Detecting the Moment of Learning. *Intelligent Tutoring Systems*, 10, 26-35 (2010) [Full Conference Paper]. Nominated for Best Paper; **Awarded Best Oral Presentation** ITS 2010.
  - **Goldstein, Adam B.**, Baker, Ryan, S.J.d, Heffernan, Neil T.: Pinpointing Learning Moments. *Educational Data Mining* (2010) [Poster].
  - Baker, Ryan, S.J.d, **Goldstein, Adam B.**, Heffernan, Neil T.: Detecting the Moment of Learning. *International Journal of Artificial Intelligence in Education* (Accepted) [Journal].
- Presented and participated as a member of the Tutor Research Group and Artificial Intelligence Research Group.

**Brandeis University**  
*BA in Computer Science / East Asian Studies*

September 2005 - May 2009  
Waltham, MA

- Worked as a Web and Applications Developer for the Web and Middleware Development Group all years and one summer.
- Programmed for SIP Communicator as a part of the 2007 Google Summer of Code.
- Studied in Kyoto, Japan 2007-2008 as part of KCJS, finishing with approximately 2-kyu level Japanese.
- Participated in Men's Varsity Soccer, Computer Operators Group, Snowboarding Club, and Japanese Language Table.
- Presented at the 2009 Boston Japanese Speech Contest (ボストン近郊日本語スピーチ発表会).

## Work Experience

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**Senior Software Systems Engineer**  
*The MITRE Corporation*

June 2011 - Present  
Bedford, MA

- Developed in Ruby on Rails for ONC funded OSS healthcare projects, including hQuery, Cypress, and popHealth.
- Wrote CoffeeScript to automatically generate executable JavaScript as MapReduce jobs through MongoDB based on a drag and drop UI in hQuery.
  - Introduced Jasmine to test dynamically generated JavaScript, along with extensive Rails testing.
- Refactored entire Cypress project, including transitioning to a modular Sass approach along with Twitter Bootstrap.
- Created and maintained an EC2 AMI for project demo servers and to allow easy external deployment.
- Programmed in C for an internal research project a multi-threaded daemon that polls for datagrams, consults the Gnome Keyring asynchronously, and returns results to clients.
- Currently implementing in Ruby a framework for automatic generation of unit test patients in the C32 XML format from HQMF documents for exhaustively testing the logic of EHR vendor's Clinical Quality Measures calculations.
- Volunteered under the Civic Duty program to run a programming club at a local Watertown, MA high school.

- Developed in Ruby on Rails for ASSISTments, an Intelligent Tutoring System primarily used for Math.
- Programmed many bug fixes, features, and UI improvements, including:
  - Improved precision of logging user actions to support synchronization with Android devices.
  - Redesigned and implemented UIs for tutor class creation and content building systems.
  - Implemented Bayesian Knowledge Tracing linked between Ruby and Java GWT systems.
- Worked as lab manager for the system in 2010:
  - Managed several undergraduates, delegating tasks and overseeing progress of 2 content builders and 6 programmers. Assisted with initial designs, creating mock-ups, and planning for test cases.
  - Maintained SVN, both to manage development/production releases and also to control access for a rapidly changing staff.
  - Created a developer's image for Windows 7 boxes and wrote a batch file and shell script for environment setup for external developers.
  - Documentation: Wrote an XML/XSL list of all Ruby gems on the production servers (predating bundler), wrote guides for how to update nginx, PostgreSQL, and firewall configuration.

- Tested and developed in Java for SPARTEN, a program that uses genetic algorithms to automate coordinating routes for Unmanned Aerial Vehicles.
- Wrote meta-machine learning to find ideal initial parameters for the UAV planning's EA.
- Conducted significant refactoring to remove a lot of business logic from GUIs, transitioning the project from a stand-alone prototype to be ready for integration with other external engines.
- Wrote hundreds of JUnit test cases for the project, which previously had none.
- Presented progress and explained the SPARTEN project to the entire company.

- Developed and maintained my.brandeis.edu in TCL, HTML, and SQL for students.
- Created applications and scripts in Perl and PHP for Brandeis' Moodle and administration.
- Programmed many bug fixes and features, including:
  - Custom calendar views in myBrandeis.
  - An automated usage statistics generator with graphs at the daily, weekly, monthly, and annual level.
  - XML parser/file extractor to migrate an old file management scheme to a newer one.
  - A scrolling widget for BrandeisNOW's news and multimedia events.

## **Skills and Technologies**

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- **Languages:** Ruby, Java, JavaScript (CoffeeScript), C
- **Web technologies:** Rails, HTML, jQuery, CSS (Sass), MongoDB (MapReduce), MySQL/PostgreSQL
- Excellent communication skills, both written and oral, with technical and non-technical persons.
- Knowledgeable and comfortable with software development design patterns, particularly Agile.
- Secret security clearance in the United States.