

## Ethan J. Fast

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RESEARCH INTERESTS	My interests center upon the application of techniques from A.I. and adaptive computation to software engineering.
EDUCATION	<p>The University of Virginia</p> <ul style="list-style-type: none"><li>- B.A. Computer Science, 2011 (expected)</li><li>- GPA 3.7</li><li>- Echols Scholar</li><li>- Intermediate Honors, Deans List</li></ul> <p>James Madison HS, 2007</p>
RESEARCH EXPERIENCE	<p>Automatic Program Repair using Genetic Algorithms</p> <ul style="list-style-type: none"><li>- With Westley Weiner, Claire Le Goues, and Stephanie Forrest, I investigated a new program repair fitness function by using dynamic predicates. We demonstrated significant improvements in fitness distance correlation, and smoother evolution of repairs</li><li>- With Westley Weiner, I developed a new program repair fitness function using correctness-preserving test suite reduction. The technique lowers repair costs by 81%, fixing programs with hundreds of test cases. It thus eliminates a key performance bottleneck, while allowing for additional correctness guarantees.</li></ul>
TEACHING EXPERIENCE	<p>CS1120: From Quantum Computing to the World Wide Web, Fall 2009</p> <ul style="list-style-type: none"><li>- As a TA for Professor David Evans, my responsibilities included: providing guidance for student problem sets, helping to conduct exam review sessions, and participating in the development of course material for the students' final project.</li></ul>
AWARDS	2010 CRA Outstanding Undergraduate Research Award, Honorable Mention
PAPERS	Ethan Fast, Westley Weiner, Claire Le Goues, Stephanie Forrest, "Designing better fitness functions for automated program repair." (In submission: The Genetic and Evolutionary Computation Conference, 2010)
PROJECTS/TOOLS	<p>Created the <i>Gajure</i> framework, 2009</p> <ul style="list-style-type: none"><li>- An open source tool for quickly developing genetic algorithms in Clojure</li></ul> <p>Created <i>Clogger</i>, 2009</p> <ul style="list-style-type: none"><li>- An experimental open source blogging platform, written in Clojure.</li></ul>
WORK EXPERIENCE	<p>Instructor for Fairfax Collegiate, 2008</p> <ul style="list-style-type: none"><li>- Taught <i>Robotics Engineering and Introduction to Robotics</i></li></ul> <p>Web Developer</p> <ul style="list-style-type: none"><li>- U.Va. School of Engineering and Applied Science, 2007-2008</li></ul>