

Shaon Barman

Curriculum Vitae

Berkeley, CA

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Education

- 2009
2015 — **Ph.D. in Computer Science**, *University of California, Berkeley*, GPA: 3.85.
Emphasis in Programming Languages
- 2005
2009 — **B.S. in Computer Science**, *University of Texas at Austin*, GPA: 3.98.
Turing Scholars (CS Honors Program) and Dean Scholars Programs

PhD thesis

- Title *End-User Record and Replay for the Web*
- Advisor Ras Bodik
- Description This thesis explores the design of a record and replay system for webpages. Our system uses novel language features to faithfully replay a user's interactions. We also explore how record and replay can be used as a building block toward more expressive end-user applications.

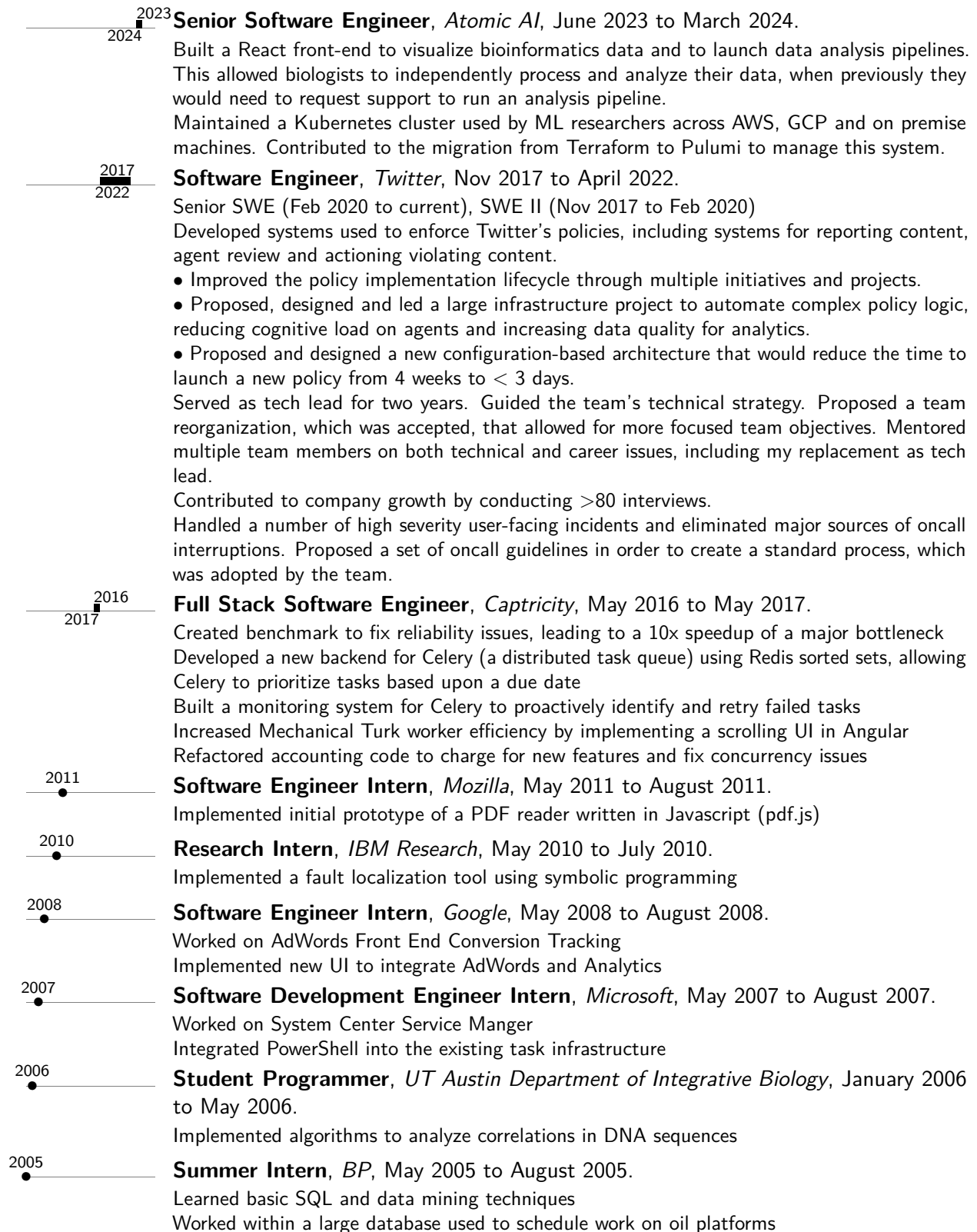
Publications

- 2023 • Boyd, Nicholas, Brandon M. Anderson, Brent Townshend, Ryan Chow, Connor J. Stephens, Ramya Rangan, Matias Kaplan, Meredith Corley, Akshay Tambe, Yuzu Ido, Jake Yukich, Tabitha Tcheau, Ayah Abdeldayem, Gabriel Ferns, Harsh Patel, Shaon Barman, April Schleck, Adrian L. Sanborn, Stephan Eismann, and Raphael J. L. Townshend. "ATOM-1: A Foundation Model for RNA Structure and Function Built on Chemical Mapping Data". In: *bioRxiv*. eprint: <https://www.biorxiv.org/content/early/2023/12/14/2023.12.13.571579.full.pdf>.
- 2016 • Barman, Shaon, Sarah Chasins, Rastislav Bodik, and Sumit Gulwani. "Ringer: Web Automation by Demonstration". In: *Proceedings of the 2016 ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications*. OOPSLA 2016. Amsterdam, Netherlands: ACM, pp. 748–764.

- 2015
Barman, Shaon, Rastislav Bodik, Satish Chandra, Emina Torlak, Arka Bhattacharya, and David Culler. "Toward Tool Support for Interactive Synthesis". In: *Proceedings of the 2015 ACM International Symposium on New Ideas, New Paradigms, and Reflections on Programming & Software*. Onward! 2015. Pittsburgh, Pennsylvania, United States: ACM.
- 2015
Chasins, Sarah, Shaon Barman, Rastislav Bodik, and Sumit Gulwani. "Browser Record and Replay As a Building Block for End-User Web Automation Tools". In: *Proceedings of the 24th International Conference on World Wide Web*. WWW '15 Companion. Florence, Italy: International World Wide Web Conferences Steering Committee, pp. 179–182.
- 2011
Barman, Shaon, Rastislav Bodik, Sagar Jain, Yewen Pu, Saurabh Srivastava, and Nicholas Tung. "Parallel Programming with Inductive Synthesis". In: *Proceedings of the 3rd USENIX Conference on Hot Topic in Parallelism*. HotPar'11. Berkeley, CA: USENIX Association, pp. 14–14.
- 2011
Chandra, Satish, Emina Torlak, Shaon Barman, and Rastislav Bodik. "Angelic Debugging". In: *Proceedings of the 33rd International Conference on Software Engineering*. ICSE '11. Waikiki, Honolulu, HI, USA: ACM, pp. 121–130.
- 2010
Bodik, Rastislav, Satish Chandra, Joel Galenson, Doug Kimelman, Nicholas Tung, Shaon Barman, and Casey Rodarmor. "Programming with Angelic Nondeterminism". In: *Proceedings of the 37th Annual ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages*. POPL '10. Madrid, Spain: ACM, pp. 339–352.
- Undergraduate Honors Thesis
- 2009
Barman, Shaon. "Aster: Automatic abstract syntax". University of Texas at Austin.

Work Experience

- 2022
2025 **Software Engineer Consultant**, *PicoYune*, Nov 2022 to April 2023, May 2024 to Current.
- Improved firmware powering a handheld air mercury monitor to a market-ready state. This work included implementing a watchdog timer to prevent the device from damaging itself, implementing a charging interface, and reducing sensor noise by 25%.
- Resolved customer pain points with the desktop Python application. This work included developing a signed application installer and developing a protocol to download data from the device without errors.
- Developed prototypes to test new product directions, such as measuring mercury in water and high/low concentration modes.



Teaching Experience

2014

CS 164: Hack Your Language!, *Teaching Assistant*, Professor Ras Bodik, Fall 2014.
Received 4.8 / 5.0 from student reviews

2012

CS 164: Hack Your Language!, *Lead Teaching Assistant*, Professor Ras Bodik, Spring 2012.
Received 4.0 / 5.0 from student reviews

Volunteer Experience

2023

2025

Alameda County CASA, *Court Appointed Special Advocate (CASA)*, Jan 2025 to Current.

Advocate for foster youth in Alameda County

2009

2015

Asha for Education, *Project Steward*, October 2009 to May 2015.

Presented updates and funding requests for Jamghat, a children's shelter in Delhi

2014

Techbridge, *Mentor*, January 2014 to May 2014.

Mentored a group of high school girls working on projects involving Arduinos

2008

2009

FIRST Robotics, *Mentor*, January 2008 to May 2009.

Helped mentor a high robotics team with the programming and construction of a robot

2006

Austin's Children Museum, *Volunteer*, June 2006.

Helped at a robotics camp teaching kids how to program Lego Mindstorms kits

Selected Coursework

2015

Audited INFO 298: Bridging the Digital Divide, *Instructor: Yael Ben-David*.

Learned about the Further Reach network, a wireless broadband ISP serving a rural, sparsely-populated area

2014

PH 290: Eat. Think. Design, *Instructor: Jaspal Sandhu*.

Applied the design process to find new ways of increasing access to healthy foods within the Navajo Nation

2012

INFO 235: Cyberlaw, *Instructor: Brian Carver*.

Wrote a Wikipedia article on the US Supreme Court case *United States v. Cotterman*

2011

E 290e: Marketing Emerging Technologies, *Instructor: Andrew Isaacs*.

Wrote a business plan for Captricity, a startup which crowdsources text extraction

2010

CS 260: Human Computer Interaction, *Instructor: Björn Hartmann*.

Developed a new IVR system for NextDrop, a project to crowdsource water availability information in the developing world

2010

CS 294: Cellphones as a Computing Platform, *Instructor: Eric Brewer*.

Helped create a system to record EKGs using a Nokia N900 cell phone and inexpensive circuits

2009

CS 265: Dynamic Program Analysis, Testing, and Debugging, *Instructor: Koushik Sen*.

2009

CS 262a: Computer Systems, *Instructor: Eric Brewer*.

———— Achievements

- Computing Research Assn.'s Outstanding Undergraduate Award-Honorable Mention (2009)