

# Afsoon Afzal

Institute for Software Research, School of  
Computer Science  
Carnegie Mellon University  
5000 Forbes Avenue, Pittsburgh, PA 15213

[afsoona@cs.cmu.edu](mailto:afsoona@cs.cmu.edu)  
[afs.afzal@gmail.com](mailto:afs.afzal@gmail.com)  
<http://cs.cmu.edu/~afsoona>  
Cell Phone: (412)980-4833

RESEARCH INTERESTS	<ul style="list-style-type: none"><li>◇ <b>Software Engineering</b></li><li>◇ <b>Automated Quality Assurance</b></li><li>◇ <b>Program Analysis</b></li><li>◇ <b>Robotics</b></li></ul>
EDUCATION	<ul style="list-style-type: none"><li>◇ <b>PhD. in Software Engineering</b> Aug. 2015 – present (Expected 2020) <a href="#">Institute for Software Research</a>, School of <a href="#">Computer Science</a> <a href="#">Carnegie Mellon University</a>, Pittsburgh, United States ADVISOR: Dr. Claire Le Goues</li><li>◇ <b>M.Sc in Software Engineering</b> May 2019 <a href="#">Institute for Software Research</a>, School of <a href="#">Computer Science</a> <a href="#">Carnegie Mellon University</a>, Pittsburgh, United States <b>GPA: 4.00/4.00</b></li><li>◇ <b>B.Sc. in Software Engineering</b> Sept. 2011 – 2015 Department of <a href="#">Computer Engineering</a> <a href="#">Sharif University of Technology</a>, Tehran, Iran <b>GPA: 18.22/20.00</b> THESIS TITLE: Bisulfite Genome Sequencing</li></ul>
HONORS AND AWARDS	<ul style="list-style-type: none"><li>◇ <b>Recipient of Presidential Fellowship</b> 2017-2018 Among hundreds of graduate students at <i>Carnegie Mellon University</i>.</li><li>◇ <b>Honorable Mention Award (top 5% of all submissions)</b> 2018 International Conference of Human-Computer Interaction (<a href="#">CHI'18</a>), Montreal, Canada</li><li>◇ <b>Ranked in top 10</b> 2015 Among more than 120 B.Sc. <i>Computer Engineering</i> students, class of 2015</li><li>◇ <b>4<sup>th</sup> Place</b> July 2013 in the <i>International RoboCup Competitions</i>, Rescue Simulation League, as the leader of <i>Poseidon</i> team, Eindhoven, Netherlands</li><li>◇ <b>2<sup>nd</sup> Place</b> Jan. 2013 in the <i>National Java Challenge Competitions</i>, Sharif University of Technology, Tehran, Iran</li><li>◇ <b>5<sup>th</sup> Place</b> July 2012 in the <i>International RoboCup Competitions</i>, Rescue Simulation League, as the leader of <i>Poseidon</i> team, Mexico City, Mexico</li><li>◇ <b>3<sup>rd</sup> Place</b> July 2009 in the <i>International RoboCup Competitions</i>, Rescue Simulation League, as the member of <i>Poseidon</i> team, Graz, Austria</li></ul>
VOLUNTEER WORK	<ul style="list-style-type: none"><li>◇ <b>Program Committee Member</b> 2020 Replication challenge track, International Conference on Predictive Models and Data Analytics in Software Engineering (PROMISE)</li><li>◇ <b>Journal Reviewer</b> 2019 IEEE Transactions on Software Engineering (TSE)</li><li>◇ <b>Admission Committee Member</b> 2019 Institute for Software Research, Carnegie Mellon University</li></ul>

- TEACHING AND WORKING EXPERIENCE**

- ◇ **Program Committee Member**

Demonstration track, International Conference of Software Engineering (ICSE) at *Montreal, Canada*

2019
  - ◇ **Program Committee Member**

Posters track, International Conference of Software Engineering (ICSE) at *Gothenburg, Sweden*

2018
  - ◇ **Student volunteer at International Conference of Software Engineering**

One of the top conferences in software engineering at *Austin, Texas*.

2016
- TEACHING AND WORKING EXPERIENCE**

- ◇ **Product Integrity Intern at [Apple Inc.](#)**

    - Interned with Mac Systems Quality team at Apple Inc., Cupertino, California

Summer 2018
  - ◇ **Software Research Intern at [ABB Inc.](#)**

    - Interned at ABB corporate research center, Raleigh, North Carolina

Summer 2017
  - ◇ **Senior Application Architect at [Congenial Mobile Co.](#)**

    - Developed the [CafeBazaar](#) which is an Android app-store for Iranian developers and users
    - Desgined and developed [CafeBazaar Payment System](#)
    - Scrum master of [CafeBazaar Payment Project](#)
    - Desgined and developed [CafeBazaar](#) in-app purchase support
    - Developed [Divar](#) which is a classified system containing website, Android app and IOS app

Jan. 2013 – Aug. 2015

Winter 2013

Spring 2013 - Aug. 2015

Summer 2013 - Aug. 2015

Fall 2013

Winter 2013
  - ◇ **Teaching Assistant**

Carnegie Mellon University

    - Software Engineering for Startups
    - Analysis of Software Artifacts

Spring 2018

Spring 2017
- PUBLICATIONS**

- ◇ **A Study on Challenges of Testing Robotic Systems**

**Afsoon Afzal**, Claire Le Goues, Michael Hilton, Christopher S. Timperley, In Proceedings of *International Conference on Software Testing, Verification and Validation (ICST'20)*, Porto, Portugal.

2020
  - ◇ **SOSRepair: Expressive Semantic Search for Real-World Program Repair**

**Afsoon Afzal**, Manish Motwani, Kathryn T. Stolee, Yuriy Brun, Claire Le Goues, *IEEE Transactions on Software Engineering (TSE)*.

2019
  - ◇ **Quality Assurance Automation in Autonomous Systems**

**Afsoon Afzal**, In Proceedings of *Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering Doctoral Symposium (ESEC/FSE'18)*, Florida, USA.

2018
  - ◇ **[Engineering Paper] An IDE for Easy Programming of Simple Robotics Tasks**

David Shepherd, Patrick Francis, David Weintrop, Diana Franklin, Boyang Li, **Afsoon Afzal**, In Proceedings of *International Working Conference on Source Code Analysis and Manipulation (SCAM'18)*, Madrid, Spain.

2018
  - ◇ **A Study on the Use of IDE Features for Debugging**

**Afsoon Afzal**, Claire Le Goues, In Proceedings of *Mining Software Repositories Challenge Track (MSR'18)*, Gothenburg, Sweden.

2018

- ◇ **A Turing Test for Genetic Improvement** 2018  
Afsoon Afzal, Jeremy Lacomis, Claire Le Goues, Christopher S. Timperley, In Proceedings of *International Genetic Improvement Workshop (GI'18)*, Gothenburg, Sweden.
- ◇ **Crashing simulated planes is cheap: Can simulation detect robotics bugs early?** 2018  
Christopher S. Timperley, Afsoon Afzal, Deborah S. Katz, Jam Marcos Hernandez, Claire Le Goues, In Proceedings of *International Conference on Software Testing, Verification and Validation (ICST'18)*, Västerås, Sweden.
- ◇ **Evaluating CoBlox: A Comparative Study of Robotics Programming Environments for Adult Novices** 2018  
David Weintrop, Afsoon Afzal, Jean Salac, Patrick Francis, Boyang Li, David Shepherd, Diana Franklin, In Proceedings of *International Conference of Human-Computer Interaction (CHI'18)*, Montreal, Canada.  
CHI'18 Honorable Mention Award (top 5% of all submissions)

GRADUATE  
PROJECTS

- ◇ **Robotics QA:** In this project, we discover and develop powerful methods to automatically detect, localize and fix defects in real-world autonomous systems using low-fidelity, software-based simulation.
- ◇ **CoBlox:** In this project, with inspiration from block-based programming languages, initially designed as an introductory programming environment for education, we created CoBlox, a block-based interface for programming a one-armed industrial robot.
- ◇ **SOSRepair:** Automatic program repair tool which generates high quality patches by replacing the buggy fragment of code with a correct implementation that is already written by developers in maybe some other project.