

Kesina Baral

Yorktown, VA

571-7588341

kbaral4@masonlive.gmu.edu

[website](#)

Summary

I am a PhD student in Computer Science at George Mason University working with Prof. [Jeff Offutt](#). My research has been focused in the area of software test automation, blind tests, automated test suite management and usability. I am currently working on android test automation. My past experiences include business app development with application testing and requirement analysis.

Research Interests

Software test execution and management automation, software usability, mutation testing, blind tests

Education

2017 - Present PhD student, Computer Science at George Mason University

Advisor: Jeff Offutt, PhD

2011 - 2015 Bachelors in Computer Engineering, IOE Pulchowk Campus, Tribhuwan University, Kathmandu, Nepal

Publication

1. **Kesina Baral**, Jeff Offutt, Fiza Mulla. [Self determination: A comprehensive strategy for making automated tests more effective and efficient](#). *To appear at ICST 2021*
2. Marcos Lordello Chaim, **Kesina Baral**, Jeff Offutt, Mario Concilio Neto, Roberto Araujo. [Efficiently Finding Data Flow Subsumptions](#). *To appear at ICST 2021*
3. **Kesina Baral**, Jeff Offutt. [An Empirical Analysis of Blind Tests](#). IEEE International Conference on Software Testing, Validation and Verification, Portugal, September 2020 (Virtual)
4. **Kesina Baral**, Paul Ammann. [Teaching a Testing Concept \(JUnit\) with Active Learning](#). IEEE International Conference on Software Testing, Verification and Validation Workshops -TestEd, Portugal, September 2020 (Virtual)
5. Jeff Offutt, Birgitta Lindström, and **Kesina Baral**. [Teaching an International Distributed Discussion-Based Course](#). Foundations on Education in Computer Science, Las Vegas, July 2019

6. **Kesina Baral**, Rasika Mohod, Jennifer Flamm, Seth Goldrich, Paul Ammann. [Evaluating a test automation decision support tool](#). IEEE International Conference on Software Testing, Verification and Validation, China, April 2019

Award

1. Selected for *2021 Summer Research Fellowship* from George Mason University Provost Office.

Research Experience

As a research assistant I have worked on discovering and analyzing blind tests. I have also been involved in projects related to automated test suite management, data flow testing, usable security, evaluation of test automation tools.

1. Research assistant Aug 2018- Present
Volgenau School of Engineering, George Mason University
Advisor: Prof. Jeff Offutt
2. Research assistant May 2018 - Aug 2018
Mentor: Prof. Paul Ammann
Highlights: Evaluated test automation tool developed by MITRE

Current research project:

- Android test automation
- Assessment of test oracle quality

Completed projects:

- **Smart test project:**
Developed test suite management and execution framework for Maven projects. The framework detects software evolution, identifies test goals and enables tests to self manage. To appear at ICST 2021.
- **Blind test project:**
Collected data from students and professionals to conduct empirical analysis to reveal a major flaw in automated tests which makes the tests blind. Accepted at ICST 2020.
- **Test automation tool evaluation:**
Evaluated a test automation decision support tool developed by MITRE. Accepted at ICST 2019.

Teaching Experience

1. Teaching Assistant at Department of Computer Science, George Mason University
 - a. SWE 437, Software testing Jan 2018 - May 2018
 - b. CS 211, SPARC Object Oriented Programming class Sept 2017- Dec 2017

Conference Presentation and Invited Talks

1. ICST 2019 - China April, 2019
2. Presented research work at Software Engineering Seminar in George Mason University
3. Gave talk on "Integration testing vs Regression testing" for professionals at Pyramid
4. ICST 2020 - Portugal (Virtual) September, 2020
5. ICST Test education workshop - Portugal (Virtual) September, 2020

Technical Skills

Programming Languages	Preferred: Java Experience in: C++, Python
Others	LateX, RegEx,
Framework, environment, and tools	JUnit, Selenium, Git, Vim, Bootstrap, Maven, Eclipse, IntelliJ IDEA, UML, MVC architecture
Front End Tools	HTML5, CSS
Scripting Languages	JavaScript, Unix shell scripting (bash)
Databases	MySQL

Professional Experience

Services:

- Sub-reviewer IEEE International Conference on Software Testing, Validation and Verification (*ICST*), 2021
- Reviewer for Empirical Software Engineering (*EMSE*), 2020
- Sub-reviewer International Journal on *Software* Tools for Technology Transfer (*STTT*), 2018
- Worked in organizing committee of test education workshop in IEEE International Conference on Software Testing, Validation and Verification (*ICST*), 2020

Test automation Intern, Pyramid Systems Inc.

Jun 2019- Aug 2019

Responsibilities:

- Implemented automated tests for 508 web accessibility
- Conducted training sessions on test automation

- ❑ Provided support for test automation requirement analysis and tool selection

Software Engineer, Deerwalk Inc.

Dec 2015 - May 2017

Responsibilities:

- ❑ Full stack web application development
- ❑ Developed reports and assessments using ElasticSearch
- ❑ Wrote SQL procedures
- ❑ Automation of SQL queries using cron jobs

Intern, LIS Nepal

Feb 2015 - Sep 2015

Project : Data Analysis Based Ecommerce System (Undergraduate Project)

Responsibilities:

- ❑ Created presentation layer of the project
- ❑ Implemented Hadoop for the processing and storage of data
- ❑ Implemented Mahout for different data mining algorithms like collaborative filtering and k-means clustering