Niloofar Mansoor

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Research Interests

Software Engineering, Empirical Software Engineering, Human-Computer Interaction, Program Comprehension, Developer Productivity, Eye Tracking, Software Reliability

Education

University of Nebraska - Lincoln **Lincoln, Nebraska**
PhD in Computer Science; GPA: 4.0 Expected Graduation: December 2022
Relevant Coursework: Software Architecture, Software Verification, Design and Analysis of Algorithms, Data Modeling For Systems Development, Mobile Software Analysis
Adviser: Dr. Bonita Sharif

University of Nebraska - Lincoln **Lincoln, Nebraska**
M.Sc., Computer Science August 2017 - December 2019
Thesis title: Formal Modeling and Analysis of a Family of Surgical Robots

Shahid Chamran University **Ahvaz, Iran**
B.Sc., Computer Engineering - Software September 2011 - March 2016

Professional Experience

SERESL - Graduate Research Assistant **Since Winter 2020**

Assessing Static Alarm Warning Messages (In progress)

- Empirical study on static alarms repositioning and its effects on manual inspection
- Responsible for conducting the study, setting up the online study environment on Qualtrics, and implementing web applications for cognitive tasks
- Responsible for conducting the eye tracking experiment and collecting and analyzing data

An exploratory study on the Alloy Specification language

- Empirical research on the comprehension of the Alloy Specification language
- Responsible for designing the experiment, implementing cognitive task applications, participant recruitment
- Conducted quantitative and qualitative data analysis on the participant's data

E2 Lab - Graduate Research Assistant **Since Winter 2018**

Automatic detection of compatibility issues in Android applications

- Research on Android compatibility issues due to API-related mismatches
- Responsible for conducting and studying experiments performed with different tools

Dependability analysis of a robotic surgery system

- Worked on reliability and dependability analysis of a robotic surgery system
- Developed architectural models of the robot system in Alloy specification language to find system bugs

Teaching Experience

Graduate Teaching Assistant
CSCE 155N - Computer Science I **Fall 2021**
School of Computing, University of Nebraska-Lincoln

- Designed the course projects for students and helping them with solving the problems
- Held office hours for students to help them with learning the course material and solving the homework and project problems

SOFT160 - Software Engineering I **Fall 2017**
Department of Computer Science and Engineering, University of Nebraska-Lincoln

- Conducted the labs and helped students with learning the basics of software engineering and programming in Java
- Held office hours for students to help them with learning the course material and solving the homework and project problems

Peer Reviewed Publications

Niloofar Mansoor - Empirical Assessment of Program Comprehension Styles in Programming Language Paradigms. - 2021 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2021). Virtual Conference.

Niloofar Mansoor, Cole S. Peterson, Bonita Sharif - **How Developers and Tools Categorize Sentiment in Stack Overflow Questions - A Pilot Study.** - Sixth International Workshop on Emotion Awareness in Software Engineering - An ICSE 2021 Workshop (SEmotion 2021 - ICSE)

Hamid Bagheri, Eunsuk Kang, **Niloofar Mansoor - Synthesis of Assurance Cases for Software Certification.** 42nd International Conference on Software Engineering - New Ideas and Emerging Results (ICSE NIER 2020)

Niloofar Mansoor, Jonathan A. Saddler, Bruno Silva, Hamid Bagheri, Myra Cohen, Shane Farritor - **Modeling and Testing a Family of Surgical Robots: An Experience Report.** 26th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2018), Industrial track

Works Under Review

Cole S. Peterson, **Niloofar Mansoor**, Mike Dodd, Bonita Sharif - **Assessing the Effect of Programming Language and Task On Eye Movements.** ACM Transactions on Computing Education (Submitted, under review)

Bruno Silva, Clay Stevens, **Niloofar Mansoor**, Witawas Srisa-an, Tingting Yu, Hamid Bagheri - **AID-roid: Automated Incompatibility Detection for Android.** 52nd Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN'22) (Submitted, under review)

Works in Preparation

Niloofar Mansoor, Hamid Bagheri, Eunsuk Kang, Bonita Sharif - **An Empirical Study Assessing Software Modeling in Alloy.** Empirical Software Engineering Journal (EMSE), to be submitted by February 2022 (top tier SE journal)

Niloofar Mansoor, Cole S. Peterson, Bonita Sharif - **How Developers Use Stack Overflow During Code Summarization – An Eye Tracking Perspective.** Empirical Software Engineering Journal (EMSE), to be submitted by March 2022 (top tier SE journal)

Conference Presentations

Empirical Assessment of Program Comprehension Styles in Programming Language Paradigms. 2021 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2021). Virtual Event. October 2021

How Developers and Tools Categorize Sentiment in Stack Overflow Questions - A Pilot Study. Sixth International Workshop on Emotion Awareness in Software Engineering - An ICSE 2021 Workshop (SEmotion 2021 - ICSE) - Virtual Event. May 2021

Modeling and Testing a Family of Surgical Robots: An Experience Report. 26th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2018) - Lake Buena Vista, Florida, USA. November 2018

Conferences and Workshops Attended

2021 Grace Hopper Celebration of Women in Computing - Virtual Event
28th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2020) - Virtual Event
2020 Grace Hopper Celebration of Women in Computing - Virtual Event

Honors and Awards

Grace Hopper Celebration of Women in Computing Scholarship **September 2021**
Sponsored by School of Computing at the University of Nebraska-Lincoln

Milton E. Mohr Fellowship **April 2021**
Awarded by the College of Engineering at the University of Nebraska-Lincoln for the Academic Year of 2021-2022. The Milton E. Mohr Fellowship was established in 1989 for students in the College of Engineering or Biotechnology degree programs. Students are selected based on their academic performance and potential for accomplishments in their specific fields.

Grace Hopper Celebration of Women in Computing Scholarship **September 2020**
Sponsored by Department of Computer Science and Engineering at University of Nebraska-Lincoln

CRA-WP Grad Cohort Workshop **April 2020**
Sponsored by Grad Cohort Workshop for Women, funded by the NSF. Event postponed to 2021 due to COVID-19.

Recipient of NSF travel grant **November 2018**
Received partial funding for traveling expenses for attending and presenting a paper at the FSE/ESEC conference

Professional Service

Hiring Committee Student Member **Fall 2019**
Served as a student member in the Software Engineering assistant professors hiring committee

Outreach Events

Sunday with a Scientist Virtual event **May 23rd, 2021**
In this event, the public meet a different scientist each month to learn about topics and careers in science. Scientists will share what they study in a fun, informal way through hands-on activities, demonstrations, and conversation. We played a live game with participants via zoom and taught them how errors are detected and corrected.

Lincoln Hour of Code and Interactive Tech Fair event **December 7th, 2019**
During this event, I helped showcase some of the eye tracking devices and encouraged children to use computers equipped with the eye tracking devices to learn how useful they can be.

Fall Graduate Information Day **November 2nd, 2019**
I participated in a graduate student recruitment event and served on a panel and answered potential students' questions about graduate school and the department.

Archie's Late Night Party at State Museum **June 13th, 2019**
I helped with showcasing eye tracking devices and introduced children and their parents to eye tracking, the kids read bedtime stories on a screen and we showed the visualization of their eye gaze to them and their parents. The goal was to encourage children to explore computer science through simple activities.

Projects and Experience

Invisible Bugs: The Downside of Coding Conventions in Debugging **Fall 2019**
Research project for Eye Tracking for Software Engineering course

- Using eye tracking to study how coding conventions affect developer debugging patterns

Domain-specific Type-based Analyzers for Cyber Physical Systems **Spring 2019**

Research project for Software Verification course

- Research project on identifying domain specific types and building small checkers to check safety properties

Investigating Security Threats in Google Chrome Extensions **Spring 2019**

Research project for Software Architecture course

- Research on Google Chrome extensions. Modelling the extensions with the Alloy specification language and finding scenarios in which there could be security problems

Little Bird - Social Media Website Inspired By Twitter **Winter of 2015**

Course Project for Database Lab

- Website designed using HTML5 and CSS, and backend implemented using PHP and MySQL

Sorayesh - Music Institute Office Automation Software **Winter and Fall of 2014**

Course Project for SE I and SE II courses - Shahid Chamran University

- Built for a Music Teaching Institute to automate the registration, accounting and hiring process
- Windows application written in `C#` programming language (SE I)
- Android application written in Java programming language (SE II)