

# Saghar Talebipour

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## Education

<b>University of Southern California – <i>PhD in Computer Science</i></b>	Los Angeles, CA, USA
<i>GPA: 4.0/4.0 – Relevant Coursework: Advanced Analysis of Algorithms, Database Systems</i>	<i>Aug. 2019 – May 2024</i>
<b>University of Tehran – <i>BSc in Computer Engineering</i></b>	Tehran, Iran
<i>GPA: 18.06/20 (3.77/4.0) – Relevant Coursework: Artificial Intelligence, Computer Networks</i>	<i>Aug. 2014 – May 2019</i>

## Technical Skills

**Programming Languages:** Python, Go, Java, SQL, C, C++, JavaScript, HTML, CSS  
**Frameworks:** Node.js, Spring, Hibernate, React — **Databases:** MySQL, MongoDB  
**Technologies:** Kubernetes, Elasticsearch, Kibana, AWS, MATLAB, Git, Alloy, Antlr, Gephi  
**Testing:** Appium, JUnit, Familiar with A/B testing

## Research and Work Experience

**University of Southern California - Graduate Research Assistant** May 2019 – Present  
Conducting research at the intersection of **software engineering**, **HCI**, and **machine learning** focused on automated testing, and UI understanding:

- Built a **framework** for automatically generating usage-based UI tests by learning execution patterns from video recordings of apps by leveraging AI-assisted (computer vision and NLP) techniques using Python and Pytorch.
- Built a cross-platform UI test transfer **tool** leveraging image feature detection and text embedding matching using Python. The tool achieved **76%** accuracy and reduced manual effort needed for testing by more than half (**55%**).
- Built a platform-independent record and replay mobile testing **tool** with more than **96%** replay accuracy using Python and JavaScript [[demo](#)].
- Working on efficient mobile app exploration for testing by imitating human interactions with apps using deep learning methods.

**Snap Inc. - Software Engineering Intern** May 2022 – Aug. 2022  
• Revamped the indexing pipeline infrastructure for Snap search team resulting in increased resiliency (**10X** reduction in service downtime) and significant cost saving (**\$146K/year**) using Go, Kubernetes, Elasticsearch, and AWS.  
• Designed an intelligent scheduling service for execution of jobs responsible for building large size indices.

**HermiTech - Software Engineering Intern** May 2017 – May 2018  
• Participated in implementing a hotel management system with more than 200 RESTful APIs using Java, Spring framework, and Hibernate ORM. This system was the first cloud ERP solution in the tourism industry in Iran.  
• Implemented the admin dashboard and reporting system for a reservation platform connecting hotels and travel agencies using Node.js, JavaScript, Vue.js, and MongoDB.

## Publications

<b><u>AVGUST: Automating Test Generation from Videos of App Executions</u></b> [ <a href="#">Link</a> ]	ESEC/FSE 2022
<i>(*Co-First-Authors) Y. Zhao*, S. Talebipour*, K. Baral, H. Park, L. Yee, S. Khan, Y. Brun, N. Medvidovic, k. Moran</i>	
<b><u>UI Test Migration Across Mobile Platforms</u></b> [ <a href="#">Link</a> ]	ASE 2021
<i>S. Talebipour, Y. Zhao, L. Dojcilovic, C. Li, N. Medvidovic</i>	
<b><u>Remote Control of iOS Devices via Accessibility Features</u></b> [ <a href="#">Link</a> ]	FEAST 2020
<i>(*Co-First-Authors) N. Lukic*, S. Talebipour*, N. Medvidovic</i>	
<b><u>AirMochi – A Tool for Remotely Controlling iOS Devices</u></b> [ <a href="#">Link</a> ]	ASE 2020
<i>N. Lukic, S. Talebipour, N. Medvidovic</i>	

## Honors and Awards

<b>WiSE Qualcomm Fellowship:</b> Graduate top-off fellowship	2021
<b>Grace Hopper Student Scholarship:</b> Full sponsorship to attend GHC 2021	2021
<b>Annenberg Fellowship:</b> University of Southern California PhD fellowship	2019

## Notable Side Projects

**Atalk:** Implemented a **compiler** for an actor-based programming language using Java and Antlr.  
**Semaphore:** Modified Linux kernel 2.6 semaphore to handle priority inversion and starvation using C.  
**Chat System:** Implemented a **chat-system** capable of file sharing using OS system calls in C++.