

SADJAD TAVAKOLI

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EXPERIENCES

Simon Fraser University (SFU)

Burnaby, Canada

Research and Teaching Assistant

Sep. 2020 - Apr. 2023

- Conducted a research paper on a hybrid change impact analysis technique for Node.js applications
- Proposed a novel pattern detection algorithm targeted on change impact analysis
- Developed a change impact analysis tool, called Caprese, using Java and Node.js

Intelligent Information Solutions Center (IIS)

Tehran, Iran

Software Engineer

Nov. 2018 - Sep. 2020

Project: A tracking and monitoring system developed for a company with **1K+ employees** and **1M+ terminals**.

- **Migrated Map service** from Google Maps to a local one.
- Pushed forward the **project architecture refactoring** process from **Microservice to Monolithic**.
- **Delivered External APIs** using Django Rest Framework (DRF).

Project: A social network development engine, based on Oxwall. It is currently used by **12 organizations**.

- Refactored Chat Service and User-Server interaction to use Websocket instead of API calls.
- Developed and maintained front-end and back-end features using PHP, JavaScript, and HTML/CSS.

Shopgram

Tehran, Iran

A social commerce platform. This project was later rebranded as SnappShop🔗, which currently is one of the most advanced online shopping platforms in Iran with **100K+ active users** and **20K+ daily visits**.

Software Engineer

Apr. 2019 - Sep. 2019

- Refactored and developed chat service implemented by Django Channels.
- Refactored and Wrote unit and integration tests, focused on the integral parts, which increased **test coverage from 15% to 60%**.
- Refactored two main models and their related views regarding **Code Smells** and **Anti-Patterns**.

Lyan

Tehran, Iran

A social commerce startup accelerated by SUT🔗. Lyan was later pivoted as Shopgram.

App Team Manager and Product Owner

Apr. 2017 - Dec. 2017

- **Managed a team of 5** to design and develop two mobile applications (Android and iOS) with **100+ APIs**.
- Managed the **product ownership** including backlog, roadmap, product release planning using Taiga, based on **Scrum** and **Kanban** principles.
- Collaborated with the marketing team to identify their needs and define product deliverables and release milestones.

Software Engineer

Nov. 2015 - Dec. 2017

- **Involved in the full project lifecycle** to design, develop, and deploy **300+ APIs** and **80+ database models**, using Django, DRF, and PostgreSQL.
- Wrote and maintained unit and integration **tests with ~ %95 coverage**.
- **Mentored and managed 10+ interns** assigned by the Sharif University of Technology as a part of their education and less experienced software engineers.
- **Reviewed 200+ merge requests and coding tasks**.
- **Technical team representative** to the marketing team.

TECHNICAL SKILLS

Languages: Python, JavaScript, Java, HTML/CSS, C/C++, \LaTeX , Bash, SQL, PHP

Knowledge: Agile Methodologies, OOP, Design Patterns, Data Structure and Algorithms, Code Smells

Tools/Frameworks: Django Rest Framework, Nodejs, jQuery, Git, Docker, MongoDB, Jenkins, React, Project Management Tools (Trello, Github, Gitlab, and Taiga), RabbitMQ

EDUCATION

Simon Fraser University (SFU)

Sep. 2020 - Apr. 2023

Master of Computing Science Under the Supervision of Dr. Saba Alimadadi, GPA 3.5/4

BC, Canada

- **Research Topic:** I worked on a hybrid change impact analysis technique for Node.js applications. Our approach combines dynamic analysis and pattern detection techniques to find the functions impacted by the applied changes in the code. Our tool is developed using JavaScript and Java. (submitted to ECOOP 2023)
- **Research Areas:** Software Engineering, Software Analysis, Change Impact Analysis, Dynamic Analysis, Pattern Detection, Mining Software Repository
- **TA Experiences:** Intro to Software Engineering (CMPT 276); Web-based Information Systems (CMPT 470)

Sharif University of Technology (SUT)

Sep. 2013 - Sep. 2019

Bachelor of Software Engineering Under the Supervision of Dr. MohammadAmin Fazli

Tehran, Iran

- **Thesis:** Computing the Cultural Distance between Countries by Mining Twitter Data (*Published in IEEE*)
- **TA Experiences:** Fundamentals of Programming (C Language)
- **Publication:** Issa Annamoradnejad, MohammadAmin Fazli, Jafar Habibi, and Sadjad Tavakoli. Cross-cultural studies using social networks data. *IEEE Transactions on Computational Social Systems*, 6(4):627–636, 2019