# Zahra **Yazdani Tazeh Kand**

Computer Engineering · BSc Student

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## Education

**University of Tehran** *Tehran, Iran*

B.Sc. in Computer Engineering *Sept. 2018 - PRESENT*

- **GPA: 17.46/20 (3.66/4.0)**

**Roshangar High School** *Tehran, Iran*

Diploma of Physics and Mathematics *2014 - 2018*

- **GPA: 19.93/20**

## Research Interests

**Computer Networks** **Information and Communications Technologies for Development (ICTD)** **HCI** **Security and Privacy**

## Publications

Tenzin Samten Ukyab, Zhihong Luo, Silvery Fu, Demetrius Davis, Zahra Yazdani, Shaddi Hasan, Hannaneh Barahouei Pasandi, Sylvia Ratnasamy, Scott Shenker. **"Making Cellular Networks More Efficient By Roaming In-Place"** – in preparation

## Teaching Experiences

**University of Tehran** *Tehran, Iran*

Undergraduate Teaching Assistant in **Formal Languages and Automata** *Sept. 2021 - Jan. 2022*

- Designed two assignments and grading.

Undergraduate Teaching Assistant in **Advanced Programming** *Feb. 2020 - Jan. 2022*

- Responsible for proposing the initial idea, designing, and implementing projects as a group of TAs and in-person or online evaluation and grading sessions.
- Assigned to total number of twelve projects in four semesters.

## Research Experiences

**Virginia Polytechnic Institute and State University, SPIN Lab** *Blacksburg, VA, USA*

Undergraduate Research Assistant *July 2021 - PRESENT*

- **Under the Supervision of Dr. Shaddi Hasan**
- **Feb. 2022 - present** Currently working on a project called "AvA". The ultimate goal of AvA is to provide more stable and better performing cellular connections in future cellular networks.
- **July 2021 - Jan. 2022** Designed tools for collecting data on California power outages for evaluating wildfire's impacts on mobile network resilience in future works. The system enables us to capture near-real-time outage data from the two largest electric utilities in the state.

## Coursework

**Introduction to Computing Systems and Programming** (18.25) **Advanced Programming** (20) **Differential Equations** (19)

**Engineering Probability and Statistics** (17) **Data Structures** (19.7) **Computer Architecture** (20) **Algorithm Design** (16.9)

**Operating System** (17.5) **Compiler design and programming languages** (18) **Systems Analysis and Design** (18.5)

**Artificial Intelligence** (19) **Computer Networks** (17.3) **Database Design** (17.1) **Software Engineering** (18.4)

**Introduction to Software Testing** (18.8) **Internet Engineering** (17.7)

## Honors & Awards

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|---|---|---|
| 2018 | **Ranked among the top 0.9% of students,** Iranian University Entrance Exam | *Tehran, Iran* |

## Notable Course Projects

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|---|---|---|
| 2022 | **Android Auto,** Launching an open-source version of android auto called “openauto” and adding features such as fixing memory leakage, and making it minimal with required features. | *C++* |
| 2022 | **Surface Scanner,** Building an android application to scan a surface using phone’s sensors such as accelerometer and gyroscope. | *Java* |
| 2022 | **IEMDB,** Implementing a movie web application from scratch using Spring Framework (for backend), JavaScript(React for frontend), MySQL, Docker, and Kubernetes. | *Java* |
| 2021 | **Project Management,** Planning different aspects of a system for tracking students’ requests, such as time management using Gantt chart, risk management, and cost managements, also planning it using Agile methods. | |
| 2021 | **OAuth,** Implementing OAuth for a web application. | *Python* |
| 2021 | **Testing Methods,** Implementing different testing methodologies such as Junit, test doubles, graph-based testing, logic-based testing, and UI testing. | *Java* |
| 2021 | **Image Classification,** Designing and implementing a neural network for image classification using Keras and TensorFlow. | *Python* |
| 2021 | **Price Prediction Using Advanced Regression Techniques,** Implementing a price prediction system for cars using models such as KNN, Decision Tree, and random forest. | *Python* |
| 2021 | **Network Routing,** Implementing a virtual network routing protocol among connected nodes using Distance Vector Multicast Routing Protocol (DVMRP). | *C++* |
| 2021 | **Network Switch,** Implementing a layer two network switch sharing data between different systems using Ethernet frames and Spanning Tree algorithm. | *C++* |
| 2021 | **FTP Server,** Implementing a FTP server sharing data with a client using socket programming. | *C++* |
| 2021 | **XV6,** Working with the XV6 kernel and adding some features such as system calls, different scheduling, user programs, and synchronization. | *C* |
| 2020 | **Sophia Compiler,** Designing and implementing a compiler for a language called ”Sophia” given the language documentations from scratch. | *Java, ANTLR4* |
| 2020 | **MIPS Processor,** Implementing MIPS Processor in three phases: single-cycle, single-cycle with pipeline, and multi-cycle. | *VerilogHDL* |
| 2019 | **Netflix,** Implementing a simple form of Netflix with a basic recommender system using object oriented programming and creating a simple web application version of it. | *C++, HTML* |

## Skills

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|---|---|
| **Programming** | Python, C, C++, Java, VerilogHDL, HTML, CSS, SQL<br>Familiar with Assembly, LaTeX |
| **Technologies** | Git, Maven, Makefile |
| **Web Development** | React, Spring, TomCat |
| **Machine Learning** | Pandas, NumPy, Scikit-learn, Matplotlib, TensorFlow, Keras |
| **Frameworks** | JUnit, Docker<br>Familiar with Kubernetes |
| **Hardware Simulators** | Familiar with ModelSim, Quartus |
| **Software Engineering** | Object-oriented Programming, Software Testing Methodologies, Agile, Scrum |
| **Operating Systems** | MacOS, Linux |
| **Other** | Android Development |
| **Languages** | Persian: Native proficiency<br>English: Professional working proficiency - TOEFL Score: 108/120 (Advanced)<br>Arabic: Elementary proficiency |