

M. Masoud Khalilian

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Education

Sep 2022 – M.Sc. in Data Science and Engineering
July 2024
(Expected) Polytechnic University of Turin, Turin, Italy
Thesis: TBD

Jan 2013 – B.Sc. in Computer Software

Jan 2018 Islamic Azad University, Tehran, Iran

B.Sc. Project: “*Streamlining Bureaucratic Processes in Higher Education: An Automated Proposal Acceptance System*,” Grade: 4.0/4.0

Research Interests

Machine and Deep Learning, Computer Vision and Image Segmentation, Data Visualization and Analysis, Deep Natural Language Processing

Awards and Honors

Nov 2023 EDISU Piemonte Scholarship, *Polytechnic University of Turin*, Turin, Italy (\$7500⁺)

Dec 2022 EDISU Piemonte Scholarship, *Polytechnic University of Turin*, Turin, Italy (\$7000⁺)

Jan 2015 – Ranked in the Top 5% for Six Consecutive Semesters, *Islamic Azad University*, Tehran,
Jan 2018 Iran

Jan 2013 – Ranked Top 1% Across Laboratory Courses, *Islamic Azad University*, Tehran, Iran
Jan 2018

Research Experience

Mar 2022 – Research Assistant, “Network Structures in U.S Big Ag,” *University of Kentucky*, Kentucky,
Oct 2023 *United States*.

- Engineered a Python Script to streamline data-cleaning processes for raw network data generated from [Sayari.com](https://sayari.com)

- Enhanced data quality in conducting social network analysis
- Designed an intuitive user interface, simplifying tasks for non-technical team members
- Reduced the original Excel manual data manipulation time by a factor of ten

Feb 2023 – “Resource Constrained Semantic Segmentation for Waste Sorting,” *Polytechnic University of Turin*, Turin, Italy
Sep 2023

- Implemented deep learning models (Enet, BiSeNet, ICNet) for waste sorting task, focusing on semantic segmentation task.
- Improved model performance through iterative experiments
- Employed knowledge distillation and loss functions to stabilize results
- Mitigated model size challenge in ICNet through pruning, quantization, and various optimization algorithms

Feb 2022 – “Intent Recognition with SVM and Random Forest,” *Polytechnic University of Turin*,
July 2022 Turin, Italy

- Employed Support Vector Machine and Random Forest techniques to develop a robust spoken language interpretation system for determining intended meanings
- Enhancing the effectiveness of voice assistants and audio-based applications

Dec 2020 – Habit Tracking Application: React Native and ASP.NET Core Implementation,
Mar 2021 *Personal Project*, Tehran, Iran

- Developed a comprehensive habit-tracking application with React Native and ASP.NET Core for long and short term goal management
- Implemented secure user authentication with JWT tokens for data privacy and access control
- Implemented a modern User interface with help of React Native Calendars for date management, React Native Chart Kit for data visualization, and NativeBase for consistent UI design

Teaching Experience

Feb 2017 – Teaching Assistant, Electronic Circuits Lab I, *Islamic Azad University*, Tehran, Iran;
June 2017 Supervisor: Dr. Mohammad Reza Farzad

Sep 2017 – Teaching Assistant, Computer Architecture Lab, *Islamic Azad University*, Tehran, Iran;
Jan 2018 Supervisor: Dr. Kooroush Manochehri

Professional Experience

Jan2022 – Mid-Level Front-End Developer, *Dorfak Intelligence Systems*, Tehran, Iran
Aug 2022

- Architected a quantitative trading and portfolio management system for stock trading web application
- Enhanced data flow within a resource-centric system featuring actively traded stocks
- Managed errors and debugging to ensure a robust user experience
- Integrated GraphQL to streamline data retrieval and reduce unnecessary API calls
- Designed an algorithm to minimize input lag in streaming financial data, providing real-time data responsiveness

Jan 2021 – Dec 2021 Junior Front-End Developer, *Dorfak Intelligence Systems*, Tehran, Iran

- Developed data visualizations, including dynamic pie charts, line charts, and custom charts to provide real-time insights from changing data sets
- Integrated diverse chart types, combining bars and lines in a single chart
- Created complex forms tailored for seamless buy/sell transactions in the financial system
- Designed a d3.js-based visualization project
- Ensured strict compliance with regulatory requirements and financial authorities' standards, incorporating essential checks, validations, and data integrity measures

Jun 2020 – Dec 2020 Web Developer, *Wolffy-Agency*, Tehran, Iran

- Developed client websites UIs using React and WordPress
- Executed the conversion of design to an interactive web page with pixel-perfect accuracy
- Employed various UI libraries, including Ant Design, Bootstrap, jQuery, and Tailwind
- Collaborated with designers and quality control teams

Feb 2018 – May 2020 Junior Full-Stack Developer, *Cadence Music Magazine*, Tehran, Iran

- Facilitated website design consultations
- Managed CMS and website development, ensuring user-friendliness and content updates
- Troubleshoot technical issues and improving website performance
- Enhanced the online presence through innovative web development

Presentations

May 2023 Khalilian, M. Masoud. Data-Driven Feature Tracking for Event Cameras. *Polytechnic University of Turin*, Turin, Italy

Aug 2017 Khalilian, M. Masoud. Exploring the Benefits of Big Data: A Trade Perspective. *Islamic Azad University*, Tehran, Iran

Feb 2017 Khalilian, M. Masoud. Understanding Operating Systems: A Comprehensive Overview. *Islamic Azad University*, Tehran, Iran

Laboratory Experience

Feb 2023 – Application of Apache Spark for Large-Scale Data Processing and Analytics, *Polytechnic University of Turin*, Turin, Italy
July 2023

Feb 2023 – Utilized Hadoop for Extensive Big Data Processing, *Polytechnic University of Turin*, Turin, Italy
July 2023

Sep 2022 – Proficient Query Writing in SQL and MongoDB for Data Management, *Polytechnic University of Turin*, Turin, Italy
Jan 2023

Sep 2018 – Proficiency in Various Integrated Circuits (ICs) Application, *Islamic Azad University*, Tehran, Iran
Jan 2019

Sep 2018 – Utilization of Proteus Software for Design Implementation, *Islamic Azad University*, Tehran, Iran
Jan 2019

Sep 2018 – Exploration of ATMEGA 32 CMOS Processor, *Islamic Azad University*, Tehran, Iran
Jan 2019

Sep 2017 – Database Design for Payroll System: ERD Modeling Approach, *Islamic Azad University*, Tehran, Iran
Jan 2018

Feb 2017 – System Analysis utilizing UML and RUP Methodology, *Islamic Azad University*, Tehran, Iran
Jun 2017

Professional Skills

Python, JavaScript (TypeScript), C#, PHP, React, React Native, ASP.NET Core, D3js, PyTorch, scikit-learn, Pandas, SQL, and MongoDB

Language Skills

English Fluent. TOEFL Score: 105; Reading: 25, Listening: 28, Speaking: 28, Writing: 24

Persian Native

References

References are available upon request.