M. Masoud Khalilian

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Education

Sep 2022 – July 2024 (*Expected*)	M.Sc. in Data Science and Engineering
	Polytechnic University of Turin, Turin, Italy
Jan 2013 – Jan 2018	B.Sc. in Computer Software
	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 – Jan 2018	Ranked in the Top 5% for Six Consecutive Semesters, *Islamic Azad University*, Tehran, Iran
Jan 2013 – Jan 2018	Ranked Top 1% Across Laboratory Courses, *Islamic Azad University*, Tehran, Iran

Research Experience

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

- Engineered a Python Script to streamline data-cleaning processes for raw network data generated from 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 – Sep 2023
"Resource Constrained Semantic Segmentation for Waste Sorting," *Polytechnic University of Turin*, Turin, Italy

- Implemented deep learning models (Enet, BiSeNet, ICNet) for waste sorting tasks, focusing on semantic segmentation.
- 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 – July 2022
"Intent Recognition with SVM and Random Forest," *Polytechnic University of Turin*, 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 – Mar 2021
Habit Tracking Application: React Native and ASP.NET Core Implementation, *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 the 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 – June 2017
Teaching Assistant, Electronic Circuits Lab I, *Islamic Azad University*, Tehran, Iran; Supervisor: Dr. Mohammad Reza Farzad

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

Professional Employment

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

- Architectured a quantitative trading and portfolio management system for a 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, *Wolfy-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 –
July 2023   Application of Apache Spark for Large-Scale Data Processing and Analytics, *Polytechnic University of Turin*, Turin, Italy

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

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

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

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

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

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

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

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.