



Seyedmohammad Khataeipour

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ABOUT ME

I recently completed my Master's degree in Computer Engineering at Politecnico di Torino, where I worked on real industrial and research software projects. My experience includes full-stack development, AI, and embedded systems. For my master's thesis, I developed a system to control a UR3e collaborative robot using HoloLens 2 and ROS, combining robotics, augmented reality, and software engineering to solve a real-world problem. I enjoy building practical solutions and continuously learning new technologies.

WORK EXPERIENCE

SOFTWARE ENGINEER – POLITECNICO DI TORINO (DIGEP) – WABTEC INDUSTRIAL RESEARCH PROJECT – 09/2024 – 08/2026 – TURIN, ITALY

I designed and developed Smarti, a full-stack platform that helps engineers analyze manufacturing test and burn-in data for high-speed railway braking systems. I built the backend services, interactive dashboards, and data processing pipelines, adding features such as SPC analysis, quality monitoring, root-cause investigation, and machine learning for predictive insights. I also implemented secure authentication, role-based access control, reporting tools, and visualizations to help engineering teams investigate issues faster and improve product quality.

SOFTWARE ENGINEER / TECHNICAL LEAD – POLITECNICO DI TORINO – KIRUNA EXPLORER RESEARCH PROJECT – 10/2024 – 09/2025 – TURIN, ITALY

I led the development of Kiruna Explorer, a full-stack web platform created with LKAB to document the urban transformation of Kiruna, Sweden. I built key frontend and backend features using React, Node.js, Express, and MongoDB, including REST APIs, authentication, interactive maps, and data management. I also coordinated development within the team, integrated machine learning features, and helped deploy the platform for a public exhibition, where it was later featured by e-flux.

TEACHING ASSISTANT – SOFTWARE ENGINEERING & WEB APPLICATIONS – POLITECNICO DI TORINO – 09/2024 – 05/2025 – TURIN, ITALY

I supported undergraduate students in Software Engineering and Web Applications courses by helping them understand software architecture, object-oriented programming, REST APIs, and full-stack development. During lab sessions, I assisted with debugging, reviewed assignments and projects, and encouraged good coding practices and Agile development.

EMBEDDED SOFTWARE ENGINEER – FATEH ENERGY KIMIA – 09/2017 – 01/2020 – TURIN

I developed embedded software for industrial automation systems used in combined-cycle power plants, with a primary focus on thermal valve control. I wrote low-level firmware in C/C++, implemented control logic for embedded controllers, and worked on hardware communication, testing, troubleshooting, and system integration to improve reliability and performance.

PROJECTS

Smarti

Manufacturing analytics platform for Wabtec.

Kiruna Explorer

Full stack research platform featured by e-flux.

AR Robot Control

Master's thesis using HoloLens 2, Unity, ROS, and UR3e.

Clementi Impianti

Company website and digital presence.

● SKILLS

Programming Languages

Python | C# | C++ | Java | TypeScript | Kotlin | SQL | ROS

Frontend Development

React.js | Web Technologies: HTML5, CSS3 | HTML5 | CSS3 | REST API Integration | JavaScript

Backend Development

Express.js | Node.js | Spring Boot | REST APIs | Authentication & Authorization | Microservices

Databases

MongoDB | PostgreSQL | MySQL | SQLite

Artificial Intelligence & Data Analysis

Machine Learning | Data Visualization | Python ML Ecosystem | Predictive Analytics | Statistical Process Control (SPC)

Robotics & Embedded Systems

ROS Noetic | HoloLens 2 | Embedded Systems | ROS2 (Foxy, Humble) | Unity | Firmware Development

Cloud, DevOps & Tools

Docker | Gradle | Apache Kafka | Git | GitLab | Linux | Maven | Postman

Software Engineering

Object-Oriented Programming | Scrum | Software Architecture | Design Patterns | Full Stack Development | Agile

● LANGUAGE SKILLS

Mother tongue(s): **PERSIAN**

Other language(s): **ENGLISH: C2 (PROFESSIONAL) | ITALIAN: C2 (PROFESSIONAL) | FRENCH: B2 | SPANISH: B1**

● VOLUNTEERING

01/02/2025 – CURRENT Torino

Save the Children Italia

Support awareness campaigns, fundraising initiatives, and community activities aimed at promoting children's rights and social inclusion while collaborating with volunteers in multicultural environments.

● EDUCATION

09/2023 – 06/2026

Master of Science in Computer Engineering

Politecnico di Torino — Turin, Italy

Master's Thesis: *Augmented Reality Mediated Control of a UR3e Collaborative Robot Using HoloLens 2: A Point and Pick Interface with ROS Integration.*

In simple words, controlling a Cobot from distance using motion, hand gestures and voice command through HoloLens2.

01/10/2019 – 06/04/2021

Master of Science in Biomedical Engineering

Sahand University of Tabriz — Iran

Specialization: Electromechanics.

23/09/2015 – 15/02/2020

Bachelor of Science in Electrical Engineering

Islamic Azad University — Iran