AMIRMOHAMMAD RAEI

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Education

Technische Universität Darmstadt   *Darmstadt, Germany*
Master of Science in Artificial Intelligence and Machine Learning   *October 2024 – Present*
Focus: Computer Vision, Deep Learning, Biometric Systems

Amirkabir University of Technology (Tehran Polytechnic)   *Tehran, Iran*
Bachelor of Science in Computer Engineering   *September 2018 – September 2023*
GPA: 15.35/20
Thesis: Simorgh Cloud Platform

Research Interests

Computer Vision, Biometric Systems, Multimodal Systems, Machine Learning, Data Mining

Experience

Research Assistant   *July 2024 - Present*
Fraunhofer Institute for Computer Graphics Research IGD   *Darmstadt, Germany*

- *Smart Living & Biometric Technologies (SLBT) Department*
- Develop multimodal biometric authentication systems combining facial recognition and fingerprint scanning
- Design computer vision pipelines for real-time biometric data processing using OpenCV
- Implement multi-camera capture systems with enterprise-grade security protocols
- Integrate professional biometric scanners with custom software solutions
- Develop mobile health monitoring platforms with sensor integration

Software Engineer   *August 2022 - July 2023*
Takhfifan   *Tehran, Iran*

- Developed new features for e-commerce platform VIP management system
- Fixed system issues and maintained platform stability
- Improved application performance and scalability
- Built full-stack solutions with modern web technologies

Software Engineer & Data Scientist   *July 2020 - August 2022*
IRITCO   *Tehran, Iran*

- Developed and maintained software systems using Python, Django, and JavaScript
- Enhanced system performance and delivered new features
- Improved admin panels and support platforms
- Managed deployment processes and resolved server-side issues
- Optimized database operations for large datasets

Research Projects

Mobile-S: Mobile Health Monitoring Platform

February 2025 - Present
Research Assistant, Fraunhofer IGD
Darmstadt, Germany

- Developed full-stack mobile health monitoring platform including Android application and backend infrastructure
- Built comprehensive user interfaces using Kotlin and Android SDK with sensor integration for BLE devices and Garmin Health SDK
- Developed FastAPI backend server with WebSocket support, user authentication, file upload handling, and real-time data processing
- Created recording workflows, annotation systems, and secure API endpoints for health monitoring data collection and storage
- **Technologies:** Android SDK, Kotlin, Python, FastAPI, WebSocket

High Level Biometric Services (HLBS)

July 2024 - February 2025
Research Assistant, Fraunhofer IGD
Darmstadt, Germany

- Built comprehensive biometric authentication platform with secure data processing and user verification workflows
- Integrated facial recognition systems with real-time processing capabilities
- Developed complete architecture using OpenCV 4.9 for computer vision and implemented secure SOAP web services
- Created multi-camera capture systems with enterprise-grade SSL/TLS security and logging
- **Technologies:** Node.js, React.js, Next.js, OpenCV 4.9, TypeScript, SOAP/WSDL, SSL/TLS

Bachelor Thesis: Simorgh Cloud Platform

May 2023 - September 2023
Amirkabir University of Technology
Tehran, Iran

- Developed full-featured cloud e-commerce platform with content management capabilities
- Handled complete business operations including customer accounts, product catalogs, order processing, and dynamic discount systems
- Integrated secure payment systems and built blog management tools with comprehensive admin dashboards
- Demonstrated scalable software architecture and modern web development practices
- **Technologies:** Django, Python, PostgreSQL, Django REST Framework, CKEditor, Bootstrap, JWT Authentication

Teaching Experience

Teaching Assistant - Web Programming
Two Semesters (Feb-Jul 2022, Sep 2022-Jan 2023)
Amirkabir University of Technology
Tehran, Iran

- *Instructor: Parham Alvani*
- Designed homework assignments for undergraduate students
- Answered student questions and provided guidance
- Evaluated and graded student assignments
- Conducted lab sessions for web development courses

Technical Skills

Programming Languages	Python, JavaScript, TypeScript, Java, C/C++, Kotlin
Machine Learning & AI	PyTorch, TensorFlow, OpenCV, Scikit-learn
Web & Backend	React.js, Node.js, Django, FastAPI
Tools & Platforms	Git, Linux, Docker, Android SDK

Language Proficiencies

Persian	Native
English	IELTS: 7.0 (R: 7.5, L: 7.5, S: 7, W: 6)
German	Intermediate (B1)

Honors and Awards

University Entrance Exam	Achieved top 1% place among more than 140,000 applicants of the Nationwide Mathematics University Entrance Exam 2018