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Amirmohammad Erfan

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Education

Bilkent University

M.S in Computer Engineering

Ankara, Turkey

Jan 2026 - Expected December 2027

Middle East Technical University

Bs.c. in Computer Engineering

Ankara, Turkey

Oct 2021 - Jan 2026

CGPA: (3.10/4.00)

Research Interests

Artificial Intelligence	Machine Learning	Data Science
Quantum Computing	Quantum Algorithms	Blockchain
Bioinformatics	Computational Biology	BioGenAI
Cybersecurity	Privacy	Internet of Things
Human-Computer Interaction	Usability Engineering	Edge Computing

Skills

– Technical Skills

- **Programming Languages:** **Python** (NLP, Transformers, LangChain, RoBERTa, Large Language Models, Qiskit, PennyLane): Used in my research projects and senior year graduation project.
C++: Extensively used in multiple university courses.
JavaScript/TypeScript (HTML, CSS): Acquired through part-time jobs at DarkSN GmbH and BayPM Tech.
C#, Q#: Used in Unitybased game design and beginner-level quantum algorithm implementations.
MATLAB: Brief experience in numerical computing and data visualization during coursework.
LaTeX: Used extensively for writing academic papers, research documentation, and technical reports.
- **Web & Front-end Development:** React, Angular, Next.js, Vite, Node.js, Material UI (MUI), HTML/CSS, Figma (UI/UX): Gained practical experience in these technologies during part-time roles and my internship at BayPM Tech.
- **Machine Learning & AI:** TensorFlow, PyTorch, RoBERTa, Hugging Face, LangChain, Transformers, Whisper, BERT, LSTM, GANs, NLP: Used in NLP research, AI-driven applications, and academic projects.
- **Quantum Computing:** Qiskit, PennyLane, Q#: Gained introductorylevel experience through

online courses and personal projects exploring quantum circuits, variational algorithms, and quantum machine learning.

- **Game Development:** Unity, C#: Used in personal game design projects and coursework to create interactive 2D/3D games and prototypes.
- **Databases & Cloud Services:**
 - SQL (MySQL):** Learned and applied in the Data Management and File Structures university course.
 - NoSQL (MongoDB, Firebase):** Used in my graduation project and personal projects for efficient data storage and retrieval.
 - AWS, Microsoft Azure:** Gained experience in cloud computing coursework and applied in real-world projects using cloud-based deployments.
- **Embedded Systems & Hardware:** Embedded Programming (PIC microcontrollers, MPLAB IDE, Pickit3 debugger): Worked on microcontroller-based projects in my Embedded Systems Development course, ranging from simple LED blinking to developing small-scale games (e.g., Tetris).
- **Software Engineering & Development:** **Version Control** (Git, GitHub, GitLab): Hands-on experience in collaborative software development projects at DarkSN GmbH and BayPM Tech, working in large teams with 20+ developers.
 - Agile Methodologies** (Scrum, Sprint Planning, Task Management): Theoretical foundation from university coursework, practical experience from part-time jobs and my graduation project, involving task assignment, sprint planning, and feature prioritization.
- **Soft Skills**
 - **Team Collaboration & Leadership:** Hands-on experience working in highly collaborative teams in part-time jobs and university projects, effectively managing tasks, coordinating with team members, and leading initiatives in structured development environments.
 - **Problem-Solving & Analytical Thinking:** Quick at analyzing and breaking down complex problems, efficiently researching solutions, and adapting to new technologies or challenges.
 - **Adaptability & Communication:** Strong ability to integrate into new teams, maintain professional relationships, and ensure clear and structured communication in both technical and non-technical settings.
 - **Public Speaking & Presentation:** Experienced in delivering technical presentations and explaining complex topics in an accessible manner.
 - **Marketing & Persuasion:** Ability to create product value propositions and effectively communicate ideas in a way that engages stakeholders or clients.
 - **Efficient Research & Learning:** Capable of quickly acquiring new knowledge, searching and analyzing information efficiently, and applying self-learning strategies to new topics or challenges.

Research Experience

- **Conference Papers (Accepted)**
 - **Amirmohammad Erfan, Dr. Prof. Leila Mortazavifar, Assoc. Mohammad Iman Jamnezhad, "Using artificial intelligence techniques in the software development process" (In Farsi Language), 4th International Conference on New Strategies in Engineering, Information Science and**

Technology in the Next Century, (2020).

- **Amirmohammad Erfan**, Mohammad Taha Zafer, **Assoc. Prof. Pelin Angın Ülküer**, "*From Voice to Code: A RAG-Enhanced Pipeline for Robust, Multi-Accent Order-to-JSON Processing*", **Guided Research Course**, (2025). [**Presented at NLPCL 2025 Conference, Preparing to publish**]

– Finished Papers - Awaiting Submission

- **Amirmohammad Erfan**, **Prof. Dr. Ranesh Naha**, "*Quantum Computing in Fog Paradigm: A Comprehensive Survey of Emerging Applications and Techniques*", (2025). [**To be submitted to ACM Computing Survey**]

– Manuscript in Preparation

- **Amirmohammad Erfan**, **Prof. Dr. Ranesh Naha**, "*A Targeted Analysis of Standardized Post-Quantum Cryptography for Fog Computing Architectures*", (2025). [**Submitted to IEEE CCGrid 2026**]

– In Progress Research

- **Assoc. Prof. Pelin Angın Ülküer**, **Amirmohammad Erfan**, Burak Çınar, "*High Performance Intrusion Detection and Prevention for Software-Defined Container Networks in the Cloud architecture*", (Nov 2024 — On-going).

Conferences

- Voluntary participant in **METU DTX Seminar**, May 16th, 2025, Ankara, Türkiye
- Invited participant in **Innovate Dubai at AMU**, Feb 5th, 2025, Dubai, United Arab Emirates
- Voluntary participant in **AI Everything Summit**, Feb 4th, 2025, Abu Dhabi, United Arab Emirates

Honors & Awards

- **Most Effective Research Award**
 - Middle East Technical University Research Symposium (2025) — Link - Certificate
- **Partial Tuition waiver Scholarship**
 - Middle East Technical University
- **SAT Exam 99th percentile (May 2021)**
 - Math: 800, English: 780, Total: 1580/1600
- **GRE Exam (September 2025)**
 - Quantitative: 165, Verbal: 156, Analytical Writing: 3.5

Work Experience

Software Developer, DPS Türkiye
Ankara, Türkiye (Hybrid)

Sep 2025 - Dec 2025

- Developing a user-generated content (UGC) platform for AI-driven content, similar to YouTube, for the client Onedio.

- Collaborating closely with the Onedio team in a fast-paced, hybrid (remote/office) work environment to meet project milestones.
- Implementing and integrating robust authentication (auth) and security tools to protect user data and platform integrity.
- Utilizing various AI tools and frameworks to support content moderation and feature development.

Computer Vision Intern, JdeRobotics

Jun 2025 - Sep 2025

Madrid, Spain (Remote)

- Developing interactive Computer Vision and AI exercises for an open-source robotics academy, contributing to the educational initiatives of Rey Juan Carlos University under the supervision of Professor Jose María Cañas Plaza.
- Implementing core functionalities and user interfaces for these exercises using Python for AI/CV algorithms and React for web-based delivery, ensuring a practical and accessible learning experience.
- Leveraging Docker for containerized development and deployment, streamlining contributions to a collaborative, open-source environment.

Map Data Analyst, Peroptyx

Jul 2023 - Aug 2024

Turkey (Remote)

- Analyzed and validated geospatial data to improve map accuracy.
- Evaluated and corrected map inconsistencies using advanced analytical tools.
- Provided feedback on data quality to enhance AI-driven mapping algorithms.

Software Developer, BAYPM

Oct 2024 - Apr 2025

London, United Kingdom (Remote)

- Developed and maintained web applications using React, Next.js, and TypeScript.
- Collaborated in an Agile team to implement low-code solutions for enterprise applications.
- Designed and optimized UI components for improved user experience.

Software Engineer Intern, BAYPM

Jul 2024 - Sep 2024

London, United Kingdom (Remote)

- Assisted in the development of low-code applications using Mendix.
- Built and deployed custom widgets and utilities for enterprise applications.
- Worked with RESTful APIs to integrate third-party services.

Deep Learning Research Intern

Aug 2024 – Nov 2024

Ankara, Türkiye (Remote), Middle East Technical University

- Conducted research on Natural Language Processing (NLP) techniques for voice-based food ordering systems.
- Designed and implemented deep learning models to interpret and classify user voice commands in a food ordering context.
- Developed a prototype system integrating NLP models with a full-stack web and mobile application for real-time restaurant order management.
- Optimized API communication and app performance to support AI-driven user interactions.

Frontend Developer, DARKSN GmbH

Feb 2023 - Dec 2023

Turkey (Remote)

- Designed and developed UI components using React and Next.js.

- Collaborated with backend developers to enhance API integration.
- Improved the performance and accessibility of web applications.

Languages

- METU English Proficiency Exam: 95/100 (September 2021)
- TOEFL iBT (July 2025): 112/120 (Reading: 29/30, Listening 30/30, Speaking 26/30, Writing 27/30)

Certifications

– Conferences

- **4th International Conference on New Solutions in Engineering**, Jul 2020
Credential ID: ICIET00222-AB
Paper Link: Civilica

– Stanford Medicine (54.50 Credits)

- **Introduction to Healthcare**, Jun 2025
Credential ID: 47051
- **Introduction to Clinical Data**, Jun 2025
Credential ID: 47057
- **Fundamentals of AI and Machine Learning in Healthcare**, Jun 2025
Credential ID: 47055
- **Evaluations of AI Applications in Healthcare**, July 2025
Credential ID: 47063
- **AI in Healthcare Capstone**, July 2025
Credential ID: 39163

– Udemy

- **QC101 Quantum Computing & Intro to Quantum Machine Learning**, Jul 2025
Credential ID: UC-f0f28d77-be30-43b6-9035-35fb730b4602
- **Complete C# Unity Game Developer 3D**, Jun 2025
Credential ID: UC-4b7a4bb2-ca04-4803-a5f0-8e83b325fbce
- **Deep Learning: Advanced Computer Vision (GANs, SSD, +More!)**, Apr 2025
Credential ID: UC-163cc260-e941-4024-aa61-6c0ced175130
- **Docker & Kubernetes: The Practical Guide**, Mar 2025
Credential ID: UC-2e86bb50-39be-4c0b-b996-84580c117c24
- **Fine Tuning LLM with Hugging Face Transformers for NLP**, Mar 2025
Credential ID: UC-0cecef66-49e0-4d83-a2e6-805cb940fdbb
- **Hacking and Securing Docker Containers v2.0**, Mar 2025
Credential ID: UC-cbb62985-7391-418b-bc24-1d80facc6666
- **The AI Engineer Course 2025: Complete AI Engineer Bootcamp**, Mar 2025
Credential ID: UC-b2c3eb90-a376-429f-aa1e-3a293cc7774a

– **Coursera**

- **Algorithms on Strings**, Feb 2023
Credential ID: HDPDG7RB9HCZ
- **Advanced Algorithms and Complexity**, Feb 2023
Credential ID: 83XDZHUQSHEN
- **Algorithms on Graphs**, Feb 2023
Credential ID: FZD5PTQL6UFJ
- **Data Structures**, Feb 2023
Credential ID: XTRDUSAVF924
- **Data Structures and Algorithms Specialization**, Feb 2023
Credential ID: SZ2Q6XTSXLPP
- **Genome Assembly Programming Challenge**, Feb 2023
Credential ID: L3B6P6U7E7L2
- **Algorithmic Toolbox**, Jan 2023
Credential ID: BUTUMZCHCDGG
- **Machine Learning Specialization**, Sep 2022
Credential ID: S2YW579H38EJ
- **Advanced Learning Algorithms**, Sep 2022
Credential ID: V3GYJDEU4BQF
- **Unsupervised Learning, Recommenders, Reinforcement Learning**, Sep 2022
Credential ID: CWHGSMUARXU2
- **Supervised Machine Learning: Regression and Classification**, Aug 2022
Credential ID: NT52CYZ6USUV

– **HuggingFace**

- **AI Agents Fundamentals by HuggingFace**, Mar 2025
Credential ID: 2025-03-20