Alireza Fadaei

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Education

2022–2025   **M.Sc. in Software Engineering**
Location: Azad University, Najafabad Branch, Isfahan, Iran
Thesis Topic: *An Optimized Federated Deep Learning Approach for Intrusion Detection in Dew Computing Environments*
Thesis Grade: 20/20
Supervisor: Dr. Barekatain
GPA: 16.93/20 (Top Student; direct Ph.D. admission)

2017–2022   **B.Sc. in Computer Engineering**
Location: University of Isfahan, Isfahan, Iran
Thesis Topic: *Design and Implementation of an ADS-B-Based Aircraft Observation System*
Thesis Grade:: 20/20
Supervisor: Dr. Bohlooli
GPA: 14.67/20 - 15.5/20 (Last Two Years)

Notable Selected Courses

Master
- Advanced Computer Networks (17.5/20), Cloud Computing (17/20)
- Advanced Network Security (18.85/20), Data Mining (17/20), Software Architecture (17.5/20)

Bachelor
- Algorithm Design (16/20), Computer Architecture (17/20), Operating Systems (18.04/20)
- Computer Networks (16.25/20), Internet Engineering (17.24/20)
- Principles of Compiler Design (20/20), Computer Design of Digital Systems (18.15/20)

Fields of Interest

Machine Learning & AI Security   Deep Learning, Federated Learning, Adversarial ML, Explainable AI, Privacy-Preserving Learning, LLM Security, Trustworthy AI

Cybersecurity   Intrusion Detection, Threat Intelligence, Adversarial Attacks, Ransomware, IoT & Cloud Security, Privacy & Data Protection

Computer Networks   IoT, Dew/Cloud Computing, SDN, Network Virtualization, Digital Twins

Publications & Research

2023–2025   **M.Sc. Thesis Research**, *Azad University, Najafabad Branch*, Isfahan, Iran
Publication: A. Fadaei, B. Barekatain. *A Novel Intrusion Detection System for Dew Computing Environments Based on an Enhanced Federated Deep Learning Model. Under review at Knowledge-Based Systems (Elsevier)*, 2025.
- Designed a lightweight CNN-based intrusion detection system (IDS) tailored for resource-constrained dew and edge nodes.
- Integrated federated learning to minimize bandwidth usage and improve model convergence, achieving $\sim$58% reduction in training time.

Workshops & Seminars

2025 (Apr–May)   **2nd National Dana Cup Programming Competition** — Azad University, Najafabad Branch, Isfahan, Iran. *Backend Programming Instructor and Referee.* Trained participants in backend development and evaluated team projects in a national-level programming contest.

2024 (Apr–May)   **1st National Dana Cup Programming Competition** — Azad University, Najafabad Branch, Isfahan, Iran. *Backend Programming Instructor.* Delivered practical workshops on backend design and guided teams during the competition.

Work Experience

2024–Present	**Programming Instructor**, *Iran TVTO*, Isfahan, Iran Teaching programming fundamentals and software development practices to vocational students in official training programs.
2022–2024	**Software Developer**, *Fardaad (ISTT)*, Isfahan, Iran Built vulnerability and patch management tools deployed in municipal/government networks; Optimized backend algorithms, reducing patch deployment time by 40%.
2021–2022	**Backend Developer**, *Meta Menu (Poytek)*, Isfahan, Iran Contributed to the development of a cloud-based restaurant management system as part of an agile startup team.
2021–2022	**Backend Developer**, *PCG Lab, Isfahan University of Technology*, Isfahan, Iran Built a biomedical information extraction system using academic research papers; integrated NLP techniques and database storage.

Teaching Experience

2020–2021	**Teaching Assistant**, *University of Isfahan*, Isfahan, Iran - **Compiler Design** — Fall 2021 (Supervisor: Dr. Asadi) - **Fundamentals of Programming** — Fall 2020 (Supervisor: Dr. Asadi) - **Computer Workshop** — Winter 2020 (Supervisor: Dr. Bohlooli)
2021	**Python Instructor**, *Faculty of Agriculture, Isfahan University of Technology*, Isfahan, Iran Delivered applied Python programming workshops to non-CS majors.

Honors & Awards

Summer 2025	Top Student, M.Sc. Software Engineering, Azad Univ. (direct Ph.D. admission).
Summer 2022	Best B.Sc. Thesis Award, Dept. of Computer Engineering, University of Isfahan.
Spring 2022	National M.Sc. Entrance Exam: Ranked 185/150,000 (top 0.12%).

Skills

Programming & ML	Python, C++, Java, JavaScript, Node.js, TensorFlow, Scikit-learn, Pandas, NumPy
Systems & Security	Docker, Nginx, Linux, CloudSim, Vulnerability Management
Databases & Web	Django, Flask, Express.js, React.js, Django REST Framework (DRF), RESTful APIs, PostgreSQL, Redis, Celery
Certification	LPIC-1: Linux Professional Institute Certification

Test Scores

IELTS (March 2025)	Overall: 7.5 (Reading: 8.5, Listening: 7.5, Writing: 7.0, Speaking: 6.5)

References

Dr. Behrang Barekatain, *Associate Professor of Computer Engineering*, Azad University, Najafabad Branch, Faculty of Computer Engineering
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Dr. Ali Bohlooli, *Associate Professor of Computer Engineering*, University of Isfahan, Faculty of Computer Engineering
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Dr. Shohre Ajoudanian, *Assistant Professor of Computer Engineering*, Azad University, Najafabad Branch, Faculty of Computer Engineering
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