Alireza Fadaei

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Education

2022–2025   **M.Sc. in Software Engineering**, *Azad University, Najafabad Branch*, Isfahan, Iran
GPA: 3.77/4.00 (Top Student; direct Ph.D. admission)
Thesis: *An Optimized Federated Deep Learning Approach for Intrusion Detection in Dew Computing*
Advisor: Dr. Barekatain

2017–2022   **B.Sc. in Computer Engineering**, *University of Isfahan*, Isfahan, Iran
GPA (last 60 credits): 3.00/4.00
Thesis: *Design and Implementation of an ADS-B-Based Aircraft Observation System*
Advisor: Dr. Bohlooli
Award: Best Bachelor's Thesis (2022)

Publications & Research

2023–2025   **M.Sc. Thesis Research**, *Azad University, Najafabad Branch*, Isfahan, Iran
Optimized Federated Deep Learning for Intrusion Detection in Dew Computing
- Developed CNN-based IDS optimized for resource-constrained edge nodes.
- Reduced bandwidth via federated updates; cut training time by ∼58%.
- Achieved ∼97% accuracy in 15-class classification.

Publication: A. Fadaei, B. Barekatain. *An Optimized Federated Deep Learning Approach for Intrusion Detection in Dew Computing.* Manuscript in preparation (2025).

Research Interests

Machine Learning   Deep Learning, Federated Learning

Cybersecurity   Intrusion Detection Systems (IDS), Threat Intelligence, Cryptography, Vulnerability and Patch Management

Computer Networks   Internet of Things (IoT), Dew and Cloud Computing, Software Defined Networking (SDN), Network Virtualization, Digital Twins

Blockchain   Smart Contract Security, Distributed Ledger Technology (DLT), Sybil Attacks, Digital Identity, 51% Attacks

Honors & Awards

Summer 2025   Top Student, M.Sc. Software Engineering, Azad Univ. (direct Ph.D. admission).

Spring 2025   Judge, 2nd National Dana Cup Competition (Web Application Design).

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%).

Teaching Experience

2024, 2025   **Backend Programming Instructor**, *Dana Cup Competition*, Isfahan, Iran
Trained 80+ students in backend design and software engineering for national programming contests.

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.

2018–2019   **Mathematics Teacher**, *Technical and Vocational School*, Isfahan, Iran
Taught algebra and geometry to high school students.

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.

Skills

Programming & ML   Python, C++, Java, TensorFlow, Scikit-learn, Pandas, NumPy

Systems & Security   Docker, Nginx, Vulnerability Mgmt, CloudSim, Linux

Databases & Web   Django, DRF, REST APIs, MySQL, PostgreSQL

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