

ALIREZA RAHIMIPOUR ANARAKI

Artificial Intelligence & Machine Learning | AI for Software Engineering | Distributed Systems & DevOps

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ACADEMIC PROFILE

Ph.D. student in Computer Engineering (Artificial Intelligence) with an M.Sc. in Software Engineering. Research focuses on trustworthy and efficient AI, Persian retrieval-augmented generation, machine learning for software engineering, reinforcement learning and graph neural networks for adaptive resource allocation, and resource-efficient large language models. Technical practice spans systems engineering, network infrastructure, Linux/Windows environments, virtualization, monitoring, and DevOps.

RESEARCH INTERESTS

- Trustworthy and Explainable AI; hallucination detection; retrieval-augmented generation (RAG); Persian and low-resource NLP
- Machine Learning for Software Engineering: defect prediction, intelligent testing, code generation/evolution, runtime and memory optimization
- Reinforcement Learning and Graph Neural Networks for resource allocation in distributed, cloud, edge, and high-performance computing systems
- Efficient LLM training and deployment: model compression, multi-objective optimization, adaptive resource management, and deployment efficiency

RESEARCH EXPERIENCE

Doctoral Research — Artificial Intelligence

Sep 2026 – Present

Islamic Azad University, Tehran North Branch

- Investigating trustworthy and efficient AI, with current work on hallucination detection and explainable claim verification for Persian retrieval-augmented generation.
- Developed FaRAG-Guard, an XLM-RoBERTa/LoRA-based three-way verifier with extractive evidence selection; the study reports $72.06\% \pm 2.91\%$ macro-F1 on the main test set and is under review at IEEE Transactions on Artificial Intelligence.
- Research themes extend to efficient LLM deployment, resource-aware AI, and intelligent resource allocation in distributed systems.

Graduate Research — Software Engineering

Oct 2023 – Mar 2026

Islamic Azad University, Central Tehran Branch

- Conducted research across AI-assisted software engineering, software defect prediction, intelligent web testing, large language model efficiency, edge computing, and reinforcement learning.
- Authored and co-authored multiple international conference papers, including an IEEE-published paper on reinforcement learning and graph neural networks for adaptive resource allocation.

EDUCATION

Ph.D. in Computer Engineering — Artificial Intelligence

Sep 2026 – Present

Islamic Azad University, Tehran North Branch

M.Sc. in Computer Engineering — Software Engineering

Oct 2023 – Mar 2026

Islamic Azad University, Central Tehran Branch | GPA: 17.75/20

B.Sc. in Computer Engineering — Software Engineering

Oct 2020 – Jun 2023

Islamic Azad University, Yadegar-e-Imam Khomeini (Shahr-e Rey) Branch | GPA: 17.00/20

PEER-REVIEWED PUBLICATIONS & ACCEPTED WORK

1. **Rahimipour Anaraki, A.** & Asghari, P. “Adaptive Resource Allocation in Distributed Systems Using Reinforcement Learning and Graph Neural Networks.” *2026 Fourth International Conference on Distributed Computing and High Performance Computing (DCHPC), IEEE*, pp. 1–8, 2026. DOI: 10.1109/DCHPC69296.2026.11517254.
2. **Rahimipour Anaraki, A.** “Optimizing AI Deployment in Software Engineering: A Comprehensive Survey of Techniques, Challenges, and Practices for Resource-Constrained Environments.” *Artificial Intelligence Tools in Software and Data Engineering*. Accepted for publication (2025).

1. **Rahimipour Anaraki, A.** “FaRAG-Guard: Lightweight and Explainable Hallucination Detection for Persian RAG.” *IEEE Transactions on Artificial Intelligence*. Research Article; under review. Submitted 19 June 2026.

CONFERENCE PAPERS & PRESENTATIONS

1. **Rahimipour Anaraki, A.** & Asghari, P. “Adaptive Resource Allocation in Distributed Systems Using Reinforcement Learning and Graph Neural Networks.” 4th International Conference on Distributed Computing and High Performance Computing (DCHPC 2026), Tehran, Iran, 10–11 May 2026. Paper presentation; IEEE proceedings. DOI: 10.1109/DCHPC69296.2026.11517254.
2. **Rahimipour Anaraki, A.** “Urban Transportation Data Analysis in Bangkok Using Modern Machine Learning.” 10th International Conference on Researches in Science & Engineering & 7th International Congress on Civil, Architecture and Urbanism in Asia, Kasem Bundit University, Bangkok, Thailand, 28 Aug 2025. Presentation/publication; paper code: BH-00153-AB.
3. Mirabedini, S. J., **Rahimipour Anaraki, A.**, & Sadr Tabatabayi, F. S. “The Application of Machine Learning in Predicting Software Faults During the Early Stages of Complex System Development.” 21st International Conference on Innovation and Research in Engineering Sciences (ICIRES 2025), Tbilisi, Georgia, 22 Jul 2025. Oral presentation; paper no. 64870.
4. Asghari, P., & **Rahimipour Anaraki, A.** “Resource Optimization in Large Language Model Deployment Using Reinforcement Learning and Adaptive Software Engineering.” 21st International Conference on Innovation and Research in Engineering Sciences (ICIRES 2025), Tbilisi, Georgia, 22 Jul 2025. Oral presentation; paper no. 68449.
5. **Rahimipour Anaraki, A.** “Analysis and Prediction of Software Bugs Using Deep Learning Models and Code Dependency Graphs.” 21st International Conference on Innovation and Research in Engineering Sciences (ICIRES 2025), Tbilisi, Georgia, 22 Jul 2025. Oral presentation; paper no. 69245.
6. **Rahimipour Anaraki, A.** “Design and Implementation of an Intelligent Framework for Automated Testing of Web-Based Software Using Artificial Intelligence.” 21st International Conference on Innovation and Research in Engineering Sciences (ICIRES 2025), Tbilisi, Georgia, 22 Jul 2025. Oral presentation; paper no. 69719.
7. **Rahimipour Anaraki, A.** & Asghari, P. “Applying Machine Learning to Optimize Software Runtime and Memory Usage.” 4th International Conference on New Research & Achievements in Science, Engineering & Technologies, Berlin, Germany, 13 Jul 2025. Oral presentation; paper code: BAD-00372-AB.
8. Harounabadi, A., **Rahimipour Anaraki, A.**, & Sadr Tabatabayi, F. S. “Designing Hybrid Methodologies in Artificial Intelligence for Solving Complex Problems.” 4th International Conference on Engineering & Information Technology, Düsseldorf, Germany, 20 Jun 2025. Oral presentation; certificate/paper code: 6tetsconf4_61889.
9. Mirabedini, S. J., **Rahimipour Anaraki, A.**, Sadr Tabatabayi, F. S., & Pilevar, E. “Enhancing Security and Privacy in the Internet of Things: The Revolutionary Role of Blockchain Technologies.” 4th International Conference on Engineering & Information Technology, Düsseldorf, Germany, 20 Jun 2025. Oral presentation; certificate/paper code: 6tetsconf4_66551.
10. **Rahimipour Anaraki, A.** “Reducing Resource Consumption in Training Large Language Models through Multi-Objective Optimization.” 2nd International Conference on Computer, Electricity, Mechanics and Engineering Sciences, Eindhoven, Netherlands, 29 May 2025. Oral presentation; paper code: 833335; certificate code: Cmel202505905; Civilica COI: CMELC02_083.
11. **Rahimipour Anaraki, A.** “A Machine Learning-Based Framework for Energy Optimization in Distributed Edge Computing Systems.” 11th International Conference on Technology, Engineering, Science and Technological Business, Saint Petersburg, Russia, 21 May 2025. Oral presentation; certificate no. 11TESTA-C0583922; registration no. 9560450660.
12. **Rahimipour Anaraki, A.** “Automatic Code Evolution Using Advanced Language Models in Software Development.” 6th International Conference on Artificial Intelligence and Its Future Prospects in Electrical, Computer, Mechanical and Telecommunication Engineering Sciences, Mashhad, Iran, Apr 2025. Poster presentation; paper code: HH-2024-575874.

SELECTED TECHNICAL REPORTS & RESEARCH NOTES

1. *Harnessing Reinforcement Learning to Revolutionize Software Development: Challenges, Innovations, and Applications.* ResearchGate, Feb 2025.
2. *Deploying and Monitoring TrueNAS with Zabbix: Introduction and Overview.* ResearchGate, Feb 2025.
3. *Deploying and Monitoring pfSense with Zabbix.* ResearchGate, Feb 2025.
4. *Deploying Oracle Database on Oracle Linux 8 with Zabbix Agent 2.* ResearchGate, Jan 2025.
5. *Webmail Implementation Report.* ResearchGate, Jan 2025.
6. *Understanding Cloud Computing — The Future of IT Infrastructure.* ResearchGate, Nov 2024.

FIELD & AREAS OF EXPERTISE

- Academic Field: Artificial Intelligence and Machine Learning, with emphasis on trustworthy and explainable AI, Persian NLP and RAG, AI for Software Engineering, reinforcement learning, graph neural networks, and efficient LLMs.
- Research & Evaluation: Experimental benchmarking, document-disjoint evaluation, ablation and stress testing, model calibration, classification metrics, and comparative evaluation.
- AI & Data Tooling: Python-based ML workflows, PyTorch, Hugging Face Transformers, PEFT/LoRA, XLM-RoBERTa, SQL, and data-processing pipelines.
- Systems, DevOps & Infrastructure: Linux, Windows Server, Docker, Kubernetes, VMware/ESXi, Zabbix, Veeam, MikroTik, pfSense, Active Directory, TrueNAS, Asterisk/Issabel, TCP/IP, LAN/WLAN, routing and switching, and network troubleshooting.

ACADEMIC & SCIENTIFIC SERVICE

Scientific Team Member — CS50Xiran Scientific Team

Mar 2023 – Feb 2024

- Assisted in organizing academic and educational programmes and supporting scientific-team activities.

SELECTED TRAINING & CERTIFICATIONS

- DevOps Engineering — Sananetco, 140 hours (Certificate No. 14485789)
- CS50's Introduction to Databases with SQL — Harvard / CS50
- CompTIA Network+ — Maktabkhooneh (Certificate No. MK-8R42OA)
- MTCNA — CanDo Institute (Certificate No. 03/20078)
- LPIC-1 — CanDo Institute (Certificate No. 03/17549)
- SQL Server 2022 Pack: Admin & Design — CanDo Institute (Certificate No. 03/17882)
- Zabbix 7 Network Monitoring — Cafe Amuzesh
- Linux for DevOps — Sananetco