

Mojtaba Sadafi

PERSONAL DETAILS

Address: Department of Electrical and Computer Engineering,
Esfarayen University of Technology, Iran

Phone: +98 (911) 599-7276

Email: m.sadafi@stu.esfarayen.ac.ir
moj.sadafi2003@gmail.com

Website: <https://www.mojsadafi.ir>

LinkedIn: <https://www.linkedin.com/in/mojtaba-sadafi-772161188/>

Scholar: <https://scholar.google.com/citations?user=3Brv6xMAAAAJhl=en>

ResearchGate: <https://www.researchgate.net/profile/Mojtaba-Sadafi>

GitHub: <https://github.com/mojjss>

EDUCATION BACKGROUND

B.Sc. in Computer Engineering

09.2021 – 08.2026

Esfarayen University of Technology, Iran (tuition-free admission)

(One of the leading engineering education centers in northeast Iran)

GPA: 3.00/4.00 (16.00/20.00)

Last-year GPA: 3.46/4.00 (18.22/20.00)

High School in Math & Physics

09.2018 – 06.2021

Doctor Shariati High School, Iran

Graded 18.37/20 (Among top 5 graduated)

RESEARCH INTERESTS

- Algorithms & optimization for networked/cyber-physical systems & power grids
- Foundation models & LLMs
- Practical AI systems
- ML for systems & cybersecurity
- Computer vision & scientific imaging

CONFERENCE PROCEEDINGS

- M. Sadafi, M. Bagheri Hashkavayi, S. M. Barakati, F. Padidaran Moghaddam, A. Hassannia: New Evaluation of Genetic Algorithm (GA) for Optimized Phasor Measurement Unit (PMU) Allocation in Power Networks and Comparative Performance Analysis with Dynamic Programming (DP) for Cybersecurity Enhancement . *IEEE | 29th International Electrical Power Distribution Conference (EPDC)*, Tehran, Iran; 10/2025.
<https://doi.org/10.1109/EPDC67173.2025.11278270>
- M. Bagheri Hashkavayi; S. M. Barakati; S. S. Mohtavipour; M. Sadafi: Disparate Scenarios for Reduction of Voltage and Current Sensors in Nested Neutral Point Clamped (NNPC) Converter. *IEEE | The 16th Power Electronics, Drives Systems and Technologies Conference (PEDSTC)*, Tabriz, Iran; 03/2025.
<https://doi.org/10.1109/PEDSTC65486.2025.10911941>
- M. Bagheri Hashkavayi; S. M. Barakati; S. S. Mohtavipour; M. Sadafi: Different Schemes for Reducing the Number of Measurement Components in Alternate Arm Multilevel Converter (AAMC). *IEEE | The 16th Power Electronics, Drives Systems and Technologies Conference (PEDSTC)*, Tabriz, Iran; 03/2025.
<https://doi.org/10.1109/PEDSTC65486.2025.10911990>

RESEARCH EXPERIENCE

- **Algorithms for PMU placement and grid cybersecurity — review in progress** (2024–present)
Surveying 100+ papers across graph-theoretic, MILP, and metaheuristic approaches (DP, GA, greedy hybrids), with treatment of zero-injection buses, N-1 contingencies, and dynamic PMU relocation. Building a comparative framework and benchmarks on IEEE 14/57/118-bus systems; manuscript in preparation.
- **Comparison of Optimization algorithms such as DP vs. GA for PMU placement** (2024)
Authored a study contrasting Dynamic Programming and Genetic Algorithms for PMU allocation with a cybersecurity lens (observability under contingencies, attack resilience); defined metrics and experimental protocol; prepared results and writing.
- **Sensor reduction in multilevel converters (NNPC, AAMC)** (09/2024–03/2025)
Co-authored two papers proposing sensing schemes that reduce voltage/current sensors by **50–70%** while maintaining capacitor-voltage balance and enabling fast fault detection. Roles: modeling and algorithm prototyping (MATLAB/Python), simulation studies, and paper preparation.
- **LLM-assisted research tooling** (2024–present)
Built prompts and scripts for literature triage/summarization, code skeleton generation for simulations, and citation management; integrated with version-controlled workflows to improve iteration speed and reproducibility.
- **Reproducible simulation pipelines** (2023–2024)
Version-controlled MATLAB studies; documented parameters, seeds, and run scripts; organized results for consistent figure/table generation.

SKILLS

| | |
|------------------------------|---|
| Programming: | Python, C/C++, MATLAB, Assembly, R |
| ML/AI: | Regression & classification, anomaly detection; interest: LLM fine-tuning & evaluation |
| Software Engineering: | Git/GitHub, Linux shell, testing/packaging, reproducible pipelines |
| Systems: | Operating systems (labs), computer networks (theory & lab), microcontrollers (AVR/ARM) |
| Tools: | L <small>A</small> T <small>E</small> X, VS Code, Jupyter, StarUML, Zotero; Simulink, Proteus, PSpice |
| Operating Systems: | Windows (XP–11), Linux (Ubuntu, Kali), macOS |
| Languages: | English (Fluent), Persian (Native), Arabic (Basic), German (Basic) |

NOTABLE COURSES

Undergraduate:

- Advanced (Python) Programming Workshop, 20/20
- Advanced Programming, 19/20
- Compiler Design, 20/20
- Computer Architecture Lab, 18/20
- Computer Networks, 18/20
- Computer Networks Lab, 18/20
- Programming Workshop, 19/20
- Discrete Mathematics, 18.5/20
- Fundamentals of Programming, 19/20
- Microcontroller & Assembly Lab, 19.75/20
- Operating Systems Lab, 20/20
- Research & Presentation Methods, 20/20
- Software Engineering I, 19.5/20
- Special Topics: Event Log & Data Analysis, 20/20

TEACHING EXPERIENCE

Teaching Assistant

09.2025 – Present

Esfarayen University of Technology, Iran

Selected Courses

- Operating Systems; Logic Circuits; Computer System Architecture (Dr. Farhang Padidaran)
- Software Engineering I; Technical English for Computer Engineering (Dr. Mohsen Mohammadi)

Conducted weekly practical sessions to solve course-related problems and develop hands-on technical skills.

HONORS AND AWARDS

- Ranked 2nd GPA among B.Sc. students of Computer Engineering, Esfarayen University of Technology, North Khorasan, Iran, 2020.
- Tuition-free admission, Esfarayen University of Technology (B.Sc.).

LICENSES & CERTIFICATIONS

- PEDSTC 2025* — Presentation certificate (Feb 2025).
- Introduction to Git and GitHub — Google (Jun 2024).
- Linux Commands & Shell Scripting — IBM/Coursera (Mar 2023).
- Programming for Everybody (Python) — Michigan/Coursera (Feb 2023).
- Supervised ML — Stanford Online (Oct 2022).