

ALI ARSLAN

AI / Machine Learning • Cybersecurity • Applied Research

Flint, Michigan • aarslan@umich.edu • +1 857 880 0712 • Google Scholar: scholar.google.com/citations?user=QjUrXTUAAAAJ&hl

RESEARCH FOCUS

Research interests: Artificial Intelligence and Machine Learning for Cybersecurity; AI-driven password security and guessing; behavioral biometrics and continuous authentication; cybersecurity education; generative AI and security.

EDUCATION

University of Michigan–Flint | 2025–Present

M.S., Computer Science & Information Systems

Fitchburg State University | 2025

M.S., Computer Science

- Transferred to University of Michigan–Flint.

Southern New Hampshire University | 2024–2025

B.S., Computer Science – Software Engineering

- GPA: 3.97/4.00 • Summa Cum Laude (Highest Honor)

Computer System Institute | 2022–2023

Computer Science Certificate, Networking Career Program – Web Development

- GPA: 4.00/4.00 • Honor Student

Atatürk University | 2013–2015

Associate Degree, Computer Programming

- GPA: 3.21/4.00 • Honor Student

RESEARCH EXPERIENCE

University of Michigan–Flint, College of Innovation and Technology | 2025–Present

Research Assistant / Teaching Assistant

- Researcher on NSF-funded work developing educational tools and training programs that integrate AI into cybersecurity education.
- Conduct research on AI systems and cybersecurity, including studies of repetitive results and their implications for security applications.
- Develop research-oriented software and laboratory environments and supervise undergraduate and graduate student researchers.
- Serve as Teaching Assistant for cybersecurity courses.

From Research to Classroom – NSF-EAGER - CRADLE Lab, University of Michigan–Flint | 2025–Present

Researcher / Developer / Assistant Supervisor

- Contribute to an NSF-funded effort to redesign cybersecurity education around artificial intelligence, machine learning, data science, and emerging AI-enabled threats.
- Develop hands-on educational laboratories that connect current cybersecurity research with classroom instruction.
- **Behavioral Biometrics Lab:** Developed a hands-on laboratory covering behavioral biometrics, keystroke dynamics, mouse movements, and continuous identity verification.
- Implemented a hybrid CNN + CatBoost machine-learning pipeline for behavioral anomaly detection and evaluation using Equal Error Rate (EER).
- **Gen-AI PassLab:** Developed hands-on laboratories focused on AI-powered password guessing, password security, and data-driven password-strength analysis.
- Connected generative AI and machine-learning methods with defensive cybersecurity education.
- Completed laboratories were adopted as course materials at the University of Michigan–Flint.

SELECTED TECHNICAL PROJECTS

Jetstream2 (OpenStack) User Client for Server and User Management | 2025–Present

Architect / Developer | CRADLELAB, University of Michigan–Flint

- Designed a desktop client and middleware architecture to automate OpenStack server resource management for classroom use.
- Integrated OpenStack Keystone, NSS/PAM hooks, and the default Guacamole server to centralize student access and automate server shelving/unshelving.
- Project accepted for tutorial presentation at ACM SIGCSE; planned as an open-source resource for NSF NAIRR.

Web-Based PHP Optical Mark Reader | 2025–Present

Architect / Developer | CRADLELAB, University of Michigan–Flint

- Designed and implemented core OMR functionality using the PHP GD library, including form definition, template management, perspective correction, and binarization.
- Implemented the required algorithms and subsystems from scratch and integrated the system into an LMS environment.

Indoor Navigation Study | 2018–2019

Project Manager | PTT R&D Division

- Led feasibility, theoretical, and architectural work for an indoor navigation system using Wi-Fi signals, including a proof-of-concept for large facilities such as Istanbul Airport.

Volume Measurement Using Stereo Image Processing | 2018–2019

Project Manager | PTT R&D Division

- Led development of a stereo-image-processing approach for object volume measurement and prepared the system for deployment across PTT branches.
- Completed architecture, testing in a 3D environment, proof-of-concept, and reliability assessments.

Online Training Platform and Learning Management System | 2013–2015

Project Manager | Türkiye Sensory Integration Organization

- Managed development of an LMS supporting classroom management, certification, accounting, online classes, online examinations, and digital learning resources.

Electronic Subpoena and Legal Notification System | 2015–2018

- Software Developer, PTT Information Technologies Division. Successfully implemented for electronic delivery of legal notifications.

Electronic Correspondence System | 2015–2018

- Software Developer, PTT Information Technologies Division. Developed secure, signed communication infrastructure for public institutions.

PUBLICATIONS & SCHOLARLY WORK

1. **Framework of an RL Based Password Generation** — U-M Annual Data Science & AI Summit, 2025 — Published (Poster Presentation)
2. **GenAI-PassLab: Advancing Password Security Learning Through Generative AI** — ASEE Annual Conference, 2026 — Published
3. **GAME Lab: A Gamified, Generative AI-Based Cybersecurity Laboratory for Password Security Education** — FIE Annual Conference, 2026 — Accepted
4. **Benchmarking Generative Models for Password Guessing: A Comparative Study of LLMs and Deep Learning Approaches** — Annals of Telecommunications, 2026 — Under Review
5. **From Training Data to Generator Output: A Task-Aware Framework for Auditing Representativeness in Synthetic Password Corpora** — CSNET Annual Conference, 2026 — Accepted
6. **Does Session Invariance Actually Erase Session Information? A Diagnostic Study of EEG-Based Secure Authentication** — CSNET Annual Conference, 2026 — Accepted
7. **Session-Robust Dual-Projection Representation Learning for EEG-Based Authentication** — IPCC Annual Conference, 2026 — Under Review

- 8. Don't Start with the Data: Security AI Research Must Design from Ethical Observability Constraints** — NeurIPS Annual Conference, 2026 — Under Review
- 9. Can a Single Character Change Save Your Account? Heatmap-Based Password Strength Feedback Against AI-Generated Guessing** — CCNC Annual Conference, 2027 — Under Review
- 10. Scaling PassGAN Password Guessing: A Multi-Dataset Study of Coverage, Repetition, and Password Strength** — ICDM 2026 MLC Workshop — Under Review

TALKS & PRESENTATIONS

From Research to Classroom: New Cybersecurity Paradigm | Ann Arbor, Michigan

Key Speaker | University of Michigan Engineering Education Innovation Days

Gen-AI PassLab | Charlotte, North Carolina, 2026

Paper Presenter | ASEE Annual Conference

PROFESSIONAL EXPERIENCE

PTT (Türkiye National Postal Services) – Research & Development Division | 2018–2021

R&D Team Leader

- Led and contributed to R&D projects including stereo-image-based volume measurement and Wi-Fi-based indoor location tracking.
- Temporarily assigned as an external expert to support the Twelfth Development Plan and analyze information-technology education policy for 2024–2028.

Presidency of the Republic of Türkiye – Board of Education and Training Policies | 2019

External Specialist | Twelfth Development Plan

- Contributed to analysis of emerging technologies, including artificial intelligence and machine learning, and their applicability to information-technology education in Türkiye.

PTT – Information Technology Division | 2015–2018

Software Developer

- Worked on digital-transformation projects for government institutions including the Ministry of National Defense, Ministry of Justice, TÜBİTAK, and the Turkish Patent and Trademark Office.
- Served in software-development and project-management roles.

Ministry of Justice of the Republic of Türkiye – UYAP | 2016

Software Developer / Integration Lead

- Led the software integration of PTT's Electronic Notification System with the UYAP judicial informatics platform.

PROFESSIONAL CERTIFICATES

- ISO 22301 Business Continuity Management Systems — 2015
- ISO 24762 IT / Security Techniques: Disaster Recovery Services — 2015
- Occupational Health and Safety — 2018
- White Hat Hacker — 2017
- Cyber Security — Mudanya University / Mudusem, 2025

REFERENCES

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