

SALEH SAMI S. ALABDULWAHAB

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Personal Summary

Innovative AI/ML expert with a Doctor of Engineering in Information Security and 4 years of hands-on experience developing cutting-edge deep learning models for sequential data analysis, LLMs, and computer vision. Proven track record in publishing high-impact projects, mentoring junior scientists, and contributing to R&D initiatives. Expert at transforming complex data into actionable insights through advanced modeling, feature engineering, and visual analytics.

Work history

Researcher 01/2024 - 02/2025

Dongguk University Industry Academic Cooperation Foundation - Seoul, South Korea

- Developed novel deep learning models for side-channel-based reverse engineering with 99% accuracy.
- Advanced work in sequential and temporal data analysis, image processing, and large language models (LLMs).
- Created data visualizations and dashboards to present findings to technical and non-technical audiences.
- Contributed to two national R&D initiatives: High-Performance Knowledge System and Smart Community Policing.

AI/ML Researcher 03/2021 - 02/2025

PLASS Lab - Seoul, South Korea

- Developed and executed GenAI techniques for privacy-preserving network security and power signal analysis.
- Published findings in high-impact journals with 7.5 impact factor in Q1 and presented at conferences.
- Mentored junior researchers and graduate students, providing guidance on research methodologies and technical skills.
- Conducted weekly seminars to discuss topics and teach lab members.

Skills

Hard Skills: •Data Analysis •Data Visualization •Data Science •AI/ML •Python •Cybersecurity •Research
Soft Skills: •Leadership •Communication •Mentorship •English •Arabic •Problem-Solving •Writing

Education

Doctor of Engineering: Information Security 03/2021 - 02/2025

Dongguk University - Seoul, South Korea

Master of Engineering: Information Security 09/2018 - 02/2021

Dongguk University - Seoul, South Korea

Bachelor's: Information Systems 01/2015 - 05/2018

Almaarefa University - Riyadh, Saudi Arabia

Community Involvement

- Benchmark, Seoul International Book Fair: Represented Saudi Arabia as a cultural exhibitor. 2024 – 2024
- Toastmasters International: Education and Membership Officer. 2021 – 2022

Projects

- **Contextual Deep Learning for Side-Channel Leakage Modeling**
Developed DL and feature engineering methods for power leakage modeling for reverse-engineering embedded systems.
- **DL-Based Side-Channel Assembly Level Reverse Engineering with Pseudo-Labeling**
Designed a semi-supervised pipeline using contextual layers, feature engineering, and NLP for assembly-code recovery from power traces.
- **Electromagnetic Side-Channel Analysis for Forensics**
Developed a DL method for revealing confidential information about the internal functions of devices without interfering with or having direct access to them.
- **LLM-based C to Assembly Converter**
Fine-tuned LLM for C to Assembly conversion that can be used for several system architectures and compilers.
- **Skeleton-based Real-time Human Behavior Detection Study**
Developed a real-time computer vision using advanced AI methods on CCTV to detect harmful attempts.
- **Improving Face Detection on Drone Cameras**
Improved Face Detection using DL based image super resolution on drone image datasets.
- **CTGAN-Driven Synthetic Data and Feature-Selected Pipeline for Intrusion Detection Systems**
Developed a privacy-preserving CTGAN-based synthetic data generator and integrated feature-selection methods to create and curate datasets that strengthen intrusion detection in constrained IoT environments.