# AKBAR TELIKANI

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Passionate machine learning engineer with extensive experience in developing and deploying machine learning and deep learning algorithms using Python and R. With a strong track record of delivering effective solutions, particularly in the domains of energy, IoT security, healthcare, and Intelligent Transportation Systems, I excel in implementing innovative machine learning models tailored to specific applications. Proficient in leveraging advanced techniques such as multitask learning, evolutionary algorithms, and deep reinforcement learning for tasks like intrusion detection, privacy preservation, and traffic signal control. Experienced in optimizing machine learning solutions for performance and scalability, including implementation on the edge IoT layer with GPU platforms for efficient big data processing.

## PRINCIPAL INTERESTS

Machine Learning and Deep Learning, Privacy & Security, Evolutionary Computation, Internet of Things (IoT), Unmanned Aerial Vehicles (UAV), Intelligent Transportation Systems.

## ACADEMIC BACKGROUND

*Ph.D. Computer Science* Pursuing (July 2021-Present)
University of Wollongong, NSW, Australia

- Ph.D. research in Intelligent Transportation Systems under direction of prof. Jun Shen. Dissertation title: Adversarial attacks on UAV-aided transportation systems.

*MSc. Information Technology-Management information systems* 2015
Pouyandegan Danesh Institute, Chalous, Iran

## GRANTS AND FUNDINGS

**Project Title:** Robust Defences against Adversarial Machine Learning for UAV Systems
**Granting Organization:** Australian Research Council (ARC) (**LP230100083**)
**Role:** Collaborator
**Duration:** 1 Jan 2024 - 31 Dec 2026
**Funding Amount:** $445,009.00

## EMPLOYMENT HISTORY

*Research Assistant* March 2022 - March 2023
ACT Government, ACT, Australia.
**Project:** Road accident data analytics and modelling using machine learning models, such as SVM, association rule mining, and $K$-Means.

*Research Assistant* June 2022 - December 2022
University of Wollongong, Australia.
**Project:** Machine Learning for predictive analysis in the Finance domain using deep learning models.

## COURSE TAUGHT

- ENGG950: Innovation and Design

- CSIT123: Computing and Cyber Security Fundamentals
- CSIT881: Programming and Data Structures
- INFO411/INFO911:Data Mining and Knowledge Discovery
- CSIT110: Fundamental Programming with Python

**Publications**

**Akbar Telikani**, Nima Esmi Rudbardeh, Shiva Soleymanpour, Asadollah Shahbahrami, Jun Shen, Georgi Gaydadjiev, and Reza Hassanpour. "A Cost-Sensitive Machine Learning Model With Multitask Learning for Intrusion Detection in IoT." *IEEE Transactions on Industrial Informatics* (2023).

**Akbar Telikani**, Asadollah Shahbahrami, Jun Shen, Georgi Gaydadjiev, Jerry Chun-Wei Lin, An edge-aided parallel evolutionary privacy-preserving algorithm for Internet of Things, *Internet of Things, 100831,*.

**Akbar Telikani**, Mosé Rossi, Naghmeh Khajehali, Massimiliano Renzi, Pumps-as-Turbines'(PaTs) performance prediction improvement using evolutionary artificial neural networks, *Applied Energy*, Volume 330, 120316.

**Akbar Telikani**, Jun Shen, Peng Wang, Jie Yang, A privacy-aware data sharing framework for Internet of Things through edge computing platform, *2022 IEEE International Conference on Edge Computing and Communications (EDGE).*

Wei Wei, Jun Shen, **Akbar Telikani**, Mahdi Fahmideh, Wei Gao, Feasibility Analysis of Data Transmission in Partially Damaged IoT Networks of Vehicles, *IEEE Transactions on Intelligent Transportation Systems.*

**Akbar Telikani**, Jun Shen, Jie Yang, Peng Wang, Industrial IoT intrusion detection via evolutionary cost-sensitive learning and fog computing, *IEEE Internet of Things Journal.*

Qiang Wu, Jianqing Wu, Jun Shen, Bo Du, **Akbar Telikani**, Mahdi Fahmideh, & Chao Liang, Distributed agent-based deep reinforcement learning for large scale traffic signal control, *Knowledge-Based Systems*, Volume 241, 108304.

**Akbar Telikani**, Amirhessam Tahmassebi, Wolfgang Banzhaf, & Amir H. Gandomi, Evolutionary Machine Learning, *ACM Computing Surveys*, 54(8).

**Akbar Telikani**, Asadollah Shahbahrami, & Amir H. Gandomi, High-performance implementation of evolutionary privacy-preserving algorithm for big data using GPU, *Information Sciences*, 579, 251-265.

**Akbar Telikani**, Amir H. Gandomi & Kim-Kwang Raymond Choo, A cost-sensitive deep learning based approach for network traffic classification, *IEEE Transactions on Network and Service Management*, Date of Publication: 13 September 2021.

**Akbar Telikani**, Amir H. Gandomi, Asadollah Shahbahrami, & Mohammad Naderi Dehkordi (2020). An improvement of discrete binary artificial bee colony for privacy-preserving in association rule mining. *Exper Systems with Applications*, 144, 113097.

**Akbar Telikani**, Amir H. Gandomi, & Asadollah Shahbahrami. (2020). A survey on evolutionary computation for association rule mining, *Information Sciences*, 524, 318-352.

**Akbar Telikani**, & Amir H. Gandomi (2019). A cost-sensitive stacked auto-encoders for intrusion detection in the Internet of things. *Internet of Things*, Available online 3 October 2019, 100122.

**Akbar Telikani**, & Asadollah Shahbahrami (2018). Data sanitization in association rule mining: an analytical review. *Expert System with Applications*, 96, 406-426.

**Akbar Telikani**, & Asadollah Shahbahrami (2017). Optimizing association rule hiding

using combination of border and heuristic approaches. *Applied Intelligence*, 47 (2), 544–557.

**Akbar Telikani**, Asadollah Shahbahrami & Reza Tavoli (2015). Data sanitization in association rule mining based on impact factor. *Journal of AI and Data Mining*, 3 (2), 131-140.

**Invited Reviewer**

Computers & security (COSE)
Journal of Ambient Intelligence and Humanized Computing
IEEE Internet of Things Journal
Computer Communications
ACM Transactions on Knowledge Discovery from Data
Artificial Intelligence Review
IEEE Transactions on Network and Service Management
Expert Systems with Applications
Knowledge-based Systems
ACM Computing Surveys
Engineering Applications of Artificial Intelligence
Swarm and Evolutionary Computation
IEEE Transactions on Evolutionary Computation
27th International Conference on Pattern Recognition