

# Milad Tatar Mamaghani | Ph.D.

Sydney, NSW, Australia

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🌐 LinkedIn ▪ 🏠 Homepage ▪ 📄 Google Scholar ▪ 🆔 ORCID ▪ 🐙 GitHub

## Education

### Doctor of Philosophy (Ph.D.) in Engineering

Monash University - Clayton Campus

Thesis: *Safeguarding Beyond-5G Wireless UAV Communications: Design and Optimization*

Melbourne, Australia

Jan. 2019–Dec. 2022

### Bachelor of Science (B.Sc.) in Electrical–Communications Engineering

Amirkabir University of Technology (Tehran Polytechnic)

Thesis: *Secure Communications with Untrusted Relaying and Wireless Energy Harvesting*

Also awarded B.Sc. in Control Engineering with additional course credits (Feb. 2018)

Tehran, Iran

Sep. 2012–Oct. 2016

## Research & Professional Experience

### Subject Matter Expert Consultant

Mercor / Scale AI (Remote)

- ✓ Drive research-based projects through technical evaluation and domain-specific model reasoning for top-tier AI labs.
- ✓ Benchmark AI models for complex algorithmic reasoning and mathematical accuracy in STEM contexts.
- ✓ Curate high-fidelity training datasets to improve AI alignment, factual precision, and reasoning.
- ✓ Formulate advanced prompting strategies and evaluation guidelines for next-generation AI models.

Sydney, Australia

Feb. 2025–Present

### Postdoctoral Research Fellow (Level B)

The Australian National University — School of Engineering

- ✓ Conducted research on physical-layer security, short-packet communications, and integrated sensing and communications.
- ✓ Published 3 first-author papers in Q1 IEEE transactions (1x IEEE JSAC, IF 17.2, 2x IEEE TWC IF 10.4)
- ✓ Presented 2 papers at flagship conferences (1x IEEE ICC 2024 and 1x IEEE Globecom 2023).
- ✓ Received 2 best-paper awards (IEEE SPCC-TC BPA 2024; IEEE ICC BPA 2024 — top 0.6% of 2,364 submissions).
- ✓ Co-supervised 1 PhD and 2 R&D engineering students, supporting research and educational activities.
- ✓ Supervisor: A/Prof. Xiangyun Zhou

Canberra, Australia

Jan. 2023–Jan. 2025

### Doctoral Researcher

Monash University — Department of Electrical and Computer Systems Engineering

- ✓ Conducted research on wireless communications security, resource allocation, signal processing, and IoT network design.
- ✓ Designed reinforcement learning and mathematical optimization frameworks for energy-efficient airborne communications.
- ✓ Developed aerial MIMO beamforming and energy-efficient trajectory planning architectures to secure UAV networks.
- ✓ Published 7 peer-reviewed articles in leading journals; received 5+ awards, grants, and accolades for research excellence.
- ✓ Supervisor: A/Prof. Yi Hong

Melbourne, Australia

Jan. 2019–Dec. 2022

### Research Assistant

Amirkabir University of Technology — Wireless Communication Research Lab

- ✓ Researched physical-layer security, untrusted relay networks, wireless energy harvesting, and cooperative jamming.
- ✓ Produced 1 conference paper and 2 journal articles during early research and development.
- ✓ Supervisor: Prof. Abbas Mohammadi

Tehran, Iran

Jan. 2016–Nov. 2018

### Research Intern

Iran Telecommunication Research Center (ITRC) — Fixed Communications Group

- ✓ Worked on IoT systems; gained hands-on experience on applied telecommunications systems and network infrastructure.

Tehran, Iran

Jun. 2016–Sep. 2016

## Research Interests

- AI-Native Wireless 6G Networks
- Machine Learning/AI for Communications
- UAV, Satellite, and Non-Terrestrial Networks
- Physical-Layer Cybersecurity and Privacy
- Statistical Signal Processing
- ISAC/MTC/URLLC/RIS/THz

## Honours & Recognitions

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- **IEEE ComSoc Best Readings in Covert Communication and Networking**, 2025 [Link]
  - ✓ Recognises impactful and landmark technical contributions in the field. Featured paper [11].
- **Best Paper Award, IEEE SPCC-TC 2024** [Certification]
  - ✓ Recognises outstanding contributions to Signal Processing and Computing for Communications in IEEE ComSoc Community – only one paper is selected each year.
- **Best Paper Award, IEEE ICC 2024** [Certification]
  - ✓ Our work was selected as top 0.6% of 2,364 submissions across all symposia.
- Australian **Global Talent** Recognition — National Innovation program, 2024
  - ✓ Recognises individuals of exceptional achievement in strategically important fields.
- Offered **Research Fellowship — KTH Royal Institute of Technology** (2022 & 2025)
  - ✓ Selected from 60+ international applicants; declined due to personal reasons.
- **Exceptional Ph.D. Thesis** Evaluation, Monash University, 2022
  - ✓ Recognises among the top 5% thesis in the field by independent external examiners.
- **Vice Chancellor's Congratulatory Letter** for Teaching and Learning Excellence, Monash University, 2019
  - ✓ Awarded for outstanding performance in teaching and learning based on student unit evaluation.
- Offered Full **Scholarships**: Melbourne Research Scholarship (2018), Macquarie Research Excellence Scholarship (2018), Silver Scholarship — Politecnico di Milano (2019); declined for the Monash opportunity.
- **Exceptional Talent** Recognition, Amirkabir University of Technology, 2014–2016

## Awards & Grants

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- **Early Career Researcher International Travel Grant** (AUD \$3000), Australian National University, 2023
- **Postgraduate Publications Award** (AUD \$5000), Monash University, 2022
  - ✓ Competitive merit-based award for outstanding doctoral publications.
- **Graduate Research Completion Award**, Monash University, 2022
- **Engineering Faculty's Postgraduate Research Scholarship**, Monash University, 2022
- **Monash Graduate Scholarship and International Tuition Scholarship**, Monash University, 2019–2022
  - ✓ Stipend (AUD \$120,000) and full tuition waiver (AUD \$200,000) over the course of doctoral studies.

## Teaching Experience

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### Teaching Associate

Monash University — Faculty of Engineering

Melbourne, Australia

Feb. 2019–Dec. 2022

- ✓ Facilitated hands-on learning through effective tutoring, practical sessions, and lab demonstrations.
- ✓ Provided mentorship that enhanced student performance in coursework and engineering design projects.
- ✓ Contributed to curriculum delivery by designing assessments and offering constructive feedback to students.
- ✓ Coordinated and supervised engineering design projects for undergraduate and postgraduate students.
- ✓ Mentored students, assisted in designing assessments, marking, and evaluating presentations.
- ✓ Achieved an overall student satisfaction score of 4.73/5.0, ranking in the top 7.3% of all University units in the semester.

### Courses Taught

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- ECE5179: Neural Networks and Deep Learning; Tutor and Lab Demonstrator, Semester 2, 2022
- ECE5883: Advanced Signal Processing; Lab Designer and Demonstrator, Semester 1, 2022
- ENG5001: Advanced Engineering Data Analysis; Tutor, Semester 1, 2022
- FIT1048: Fundamentals of C++; Tutor and Lab Demonstrator, Semester 1, 2022
- ECE5884: Wireless Communications; Lab Demonstrator, Semester 2, 2021
- ECE4191: Engineering Design; Lab Demonstrator and Supervisor, Semester 2, 2020–2022
- ENG5105: Integrated Design; Coordinator and Project Mentor, Semester 2, 2020–2022
- ECE4146: Multimedia Technologies; Lab Demonstrator, Semester 2, 2020–2022

- ECE3141: Information and Networks; Lab Demonstrator, Semester 1, 2020–2022
- ECE4044: Telecommunications Protocols; Lab Demonstrator, Semester 1, 2020
- ECE2072: Digital Systems; Tutor and Lab Demonstrator, Semester 1, 2020–2022
- ECE4042: Communications Theory; Tutor and Lab Demonstrator, Semester 1, 2019–2022
- ECE4076: Computer Vision; Tutor, Lab Demonstrator, and Exam Coordinator, Semester 1, 2019–2022
- ECE2071: Computer Organisation and Programming, Tutor and Lab Demonstrator, Semester 1, 2019–2022

### eAssessment Supervisor

Monash University — eSolutions & Student Services

Melbourne, Australia

Jan. 2020–Dec. 2022

✓ Supervised exams and supported integrity, compliance, and student-facing assessment operations.

### Teaching Assistant

Amirkabir University of Technology — Department of Electrical Engineering

Tehran, Iran

Jan. 2016–Oct. 2017

✓ Taught undergraduate courses in communications systems and computer programming as a lab instructor.

## Student Supervision

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- **Yu Li**, Ph.D. Candidate, ANU, 2023–Present
  - ✓ **Topic:** Physical Layer Anonymous Communications; Co-supervised with A/Prof. Xiangyun Zhou
  - ✓ Contributed a co-authored paper (Ref. [18]) submitted to IEEE Trans. Commun. (2026).
- **Mac Gilligan**, Engineering R&D Student, ANU, 2024–2025
  - ✓ **Topic:** SDR Implementation for Over-the-air Secure File Transmission with GNU Radio
  - ✓ Nominated for ANU's University Medal for outstanding academic record
- **Reetika**, Visiting Bachelor Student, Indian Institute of Space Science and Technology, 2023–2024
  - ✓ **Topic:** Physical layer security for Terahertz communications; Co-supervised with Prof. Nan Yang
- **Team Supervision**, Engineering Design Projects, Monash University, 2021–2022
  - ✓ Robotic Arm: Automated color cube sorting robotic arm with microprocessor controller, 2021
  - ✓ Mobile Robot: Smart mobile robot with odometric sensing for high-level navigation and ball collection, 2022
  - ✓ Baby Monitor: Sustainable baby monitor with voice and image recognition and parent alarm system, 2022

## Professional Service & Leadership

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### Conference Organisation

- **Technical Program Committee Member** — IEEE Conference on Vehicular Technology, 2024
- **Session Chair** — IEEE Global Communications Conference (Symposium on Physical Layer Security), 2023
- **Selection Committee Panel Member**, ANU Summer Research Scholarship Programme, 2023

### Peer Review

- **Technical Reviewer** for over 25 international journals and conferences with 140+ reviews, 2018–2025
  - **Journals:** IEEE J. Sel. Areas Commun. (JSAC), IEEE Trans. Wireless Commun. (TWC), IEEE Trans. Commun. (TCOM), IEEE Trans. Inf. Forensics Security (TIFS), IEEE Trans. Signal Process. (TSP), IEEE Trans. Veh. Technol. (TVT), IEEE Wireless Commun. Lett. (WCL), and 10+ additional journals.
  - **Conferences:** IEEE ICC (2020–2023), IEEE GLOBECOM (2017, 2024), IEEE VTC (2024), etc.

### Memberships

- Member of **IEEE** (2022–2026)
- **IEEE Communications Society** (2020–2025)
- Graduate Student Member of **IEEE** (2020–2022)
- **IEEE Signal Processing Society** (2020–2022)
- Member of **IEEE Consultants Network** (2020–2025)
- **IEEE Young Professionals** (2020–2025)

## Selected Talks & Presentations

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- [5] On the Information Leakage Performance of Secure Finite Blocklength Transmissions over Rayleigh Fading Channels, presented at the *Communication Theory Symposium: Physical Layer Security and Privacy* session,

IEEE ICC 2024, Denver, CO, USA, June 2024. [Slides][Certificate]

- [4] On the Secrecy Performance of Finite Blocklength Communications over Fading Channels, presented at the *21st Australian Communications Theory Workshop (AusCTW)*, Melbourne, Feb. 2024. [Poster]
- [3] Secure Short-Packet Transmission with Aerial Relaying: Blocklength and Trajectory Co-Design, presented at the *Main Symposium on Communication and Information System Security (CISS): Physical Layer Security II* session at IEEE Globecom 2023, Kuala Lumpur, Malaysia, Dec. 2023. [Slides][Certificate]
- [2] Final Review Seminar (Ph.D. Thesis Defense): Safeguarding Wireless Communications with Unmanned Aerial Vehicles: Design and Optimization, presented at the ECSE Department, Monash University, Melbourne, Australia, Feb. 2022. [Slides]
- [1] B.Sc. Thesis Defense: Secure Communications via Untrusted Relaying with Wireless Energy Harvesting: Performance Analysis and Trade-offs [in Persian], presented at the Department of Electrical Engineering, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran, Sep. 2016.

## Publications

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**Scholarly outputs:** 12 journal articles, 3 conference papers, 2 theses, and 2 manuscripts (in progress)

**Research Impact:** 650+ citations, h-index 11, i10-index 12 (as of May 2026)

- [19] **Milad Tatar Mamaghani**, Xiangyun Zhou, Nan Yang, and Lee Swindlehurst, "Securing integrated sensing and communication against a mobile adversary: A Stackelberg game with deep reinforcement learning," *IEEE Journal on Selected Areas in Communications*, vol. 44, pp. 942-958, Sep. 2025. (IF 17.2, Q1)  
[doi](https://doi.org/10.1109/JSAC.2025.3611404) 10.1109/JSAC.2025.3611404 | [PDF](#) | [arXiv](#) | [Code](#)
- [18] Yu Li, **Milad Tatar Mamaghani**, Xiangyun Zhou, and Nan Yang, "Symbol-Aware Precoder Design for Physical-Layer Anonymous Communications," submitted to *IEEE Transactions on Communications*, Mar. 2026.  
[doi](https://doi.org/10.48550/arXiv.2602.20874) 10.48550/arXiv.2602.20874 | [arXiv](#)
- [17] Azadeh Tabeshnezhad, **Milad Tatar Mamaghani**, Lee Swindlehurst, Tommy Svensson, and Erik Ström, "Robust Beamforming Design for Secure Uplink NOMA-ISAC," under preparation, May 2026.
- [16] **Milad Tatar Mamaghani**, Xiangyun Zhou, Nan Yang, Lee Swindlehurst, and Vincent Poor, "Performance analysis of finite blocklength transmissions over wiretap fading channels: An average information leakage perspective," *IEEE Transactions on Wireless Communications*, May 2024. (IF 10.4, Q1)  
[doi](https://doi.org/10.1109/TWC.2024.3400601) 10.1109/TWC.2024.3400601 | [PDF](#) | [arXiv](#) | [Code](#)
- [15] **Milad Tatar Mamaghani**, Xiangyun Zhou, Nan Yang, Lee Swindlehurst, and Vincent Poor, "On the average information leakage of finite blocklength transmissions over Rayleigh fading channels," in *Proc. IEEE International Conference on Communications*, Denver, CO, USA, pp. 1467-1472, June 2024.  
[doi](https://doi.org/10.1109/ICC51166.2024.10622223) 10.1109/ICC51166.2024.10622223 | [arXiv](#)
- [14] **Milad Tatar Mamaghani**, Xiangyun Zhou, Nan Yang, and Lee Swindlehurst, "Secure short-packet communications via UAV-enabled mobile relaying: Joint resource optimization and 3D trajectory design," *IEEE Transactions on Wireless Communications*, Dec. 2023. (IF 10.4, Q1)  
[doi](https://doi.org/10.1109/TWC.2023.3344802) 10.1109/TWC.2023.3344802 | [PDF](#) | [arXiv](#) | [Code](#)
- [13] **Milad Tatar Mamaghani**, Xiangyun Zhou, Nan Yang, and Lee Swindlehurst, "Secure short-packet transmission with aerial relaying: Blocklength and trajectory co-design," in *Proc. IEEE Global Communications Conference*, Kuala Lumpur, Malaysia, pp. 5998-6004, Dec. 2023.  
[doi](https://doi.org/10.1109/GLOBECOM54140.2023.10437972) 10.1109/GLOBECOM54140.2023.10437972 | [arXiv](#)
- [12] **Milad Tatar Mamaghani**, "Safeguarding Beyond-5G Wireless Communications with Unmanned Aerial Vehicles: Design and Optimization," Ph.D. Thesis, Electrical and Computer Systems Engineering Department, Faculty of Engineering, Monash University, Melbourne, Australia, Dec. 2022.  
[doi](https://doi.org/10.26180/21721709.v1) 10.26180/21721709.v1
- [11] **Milad Tatar Mamaghani** and Yi Hong, "Aerial intelligent reflecting surface-enabled terahertz covert communications in beyond-5G Internet of Things," *IEEE Internet Things Journal*, vol. 9, no. 19, pp. 19012-19033, March 2022. (IF 9.9, Q1)

 10.1109/JIOT.2022.3163396 |  PDF |  arXiv |  Code

- [10] **Milad Tatar Mamaghani** and Yi Hong, "Terahertz meets untrusted UAV-relaying: Minimum secrecy energy efficiency maximization via trajectory and communication co-design," *IEEE Transactions on Vehicular Technology*, vol. 71, no. 5, pp. 4991-5006, Feb. 2022. (IF 6.41, Q1)  
 10.1109/TVT.2022.3150011 |  PDF |  arXiv
- [9] **Milad Tatar Mamaghani** and Yi Hong, "Joint trajectory and power allocation design for secure artificial noise aided UAV communications," *IEEE Transactions on Vehicular Technology*, vol. 70, no. 3, pp. 2850-2855, Mar. 2021. (IF 6.41, Q1)  
 10.1109/TVT.2021.3057397 |  PDF |  arXiv
- [8] **Milad Tatar Mamaghani** and Yi Hong, "Intelligent trajectory design for secure full-duplex MIMO-UAV relaying against active eavesdroppers: A model-free reinforcement learning approach," *IEEE Access*, vol. 9, pp. 4447-4465, Dec. 2020.  
 10.1109/ACCESS.2020.3048021 |  PDF
- [7] **Milad Tatar Mamaghani** and Yi Hong, "Improving PHY-security of UAV-enabled transmission with wireless energy harvesting: Robust trajectory design and communications resource allocation," *IEEE Transactions on Vehicular Technology*, vol. 69, no. 8, pp. 8586-8600, May 2020. (IF 6.41, Q1)  
 10.1109/TVT.2020.2998060 |  PDF |  arXiv
- [6] **Milad Tatar Mamaghani**, Ali Kuhestani, Hamid Behrouzi, "Can a multi-hop link relying on untrusted amplify-and-forward relays render security?," *Wireless Networks*, vol. 27, pp. 795-807, Nov. 2020.  
 10.1007/s11276-020-02487-w |  PDF |  arXiv
- [5] **Milad Tatar Mamaghani** and Yi Hong, "On the performance of low-altitude UAV-enabled secure AF relaying with cooperative jamming and SWIPT," *IEEE Access*, vol. 7, pp. 153060-153073, Oct. 2019.  
 10.1109/ACCESS.2019.2948384 |  PDF |  Code
- [4] **Milad Tatar Mamaghani** and Robert Abbas, "Security and reliability performance analysis for two-way wireless energy harvesting based untrusted relaying with cooperative jamming," *IET Communications*, vol. 13, no. 4, pp. 449-459, Mar. 2019.  
 10.1049/iet-com.2018.5718 |  PDF
- [3] **Milad Tatar Mamaghani**, Ali Kuhestani, and Kai Kit Wong, "Secure two-way transmission via wireless-powered untrusted relay and external jammer," *IEEE Transactions on Vehicular Technology*, vol. 67, no. 9, pp. 8451-8465, July 2018. (IF 6.41, Q1)  
 10.1109/TVT.2018.2848648 |  PDF |  arXiv
- [2] **Milad Tatar Mamaghani**, Abbas Mohammadi, Phil Yeoh, and Ali Kuhestani, "Secure two-way communication via a wireless-powered untrusted relay and friendly jammer," in *Proc. IEEE Global Communications Conference*, Singapore, pp. 1-6, Dec. 2017.  
 10.1109/GLOCOM.2017.8253999 |  arXiv
- [1] **Milad Tatar Mamaghani**, "Secure Communications via Untrusted Relaying with Wireless Energy Harvesting: Performance Analysis and Trade-offs," *B.Sc. Thesis* [in Persian], Department of Electrical Engineering, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran, Sep. 2016.

## Languages

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English (Fluent) | Persian/Farsi (Native) | Azerbaijani (Native)

Last updated: May 2026