

Hadi Mohaghegh Dolatabadi

Email: mhgh2hadi@gmail.com

Media: Twitter, Website, Google Scholar

PROFESSIONAL EXPERIENCE

- **Senior Applied Scientist** Melbourne, Australia
Oracle *Jan. 2024 - Present*
 - Developing Oracle Digital Assistant capabilities using generative AI.

- **Research Fellow in Machine Learning for Automated Decision Making** Melbourne, Australia
The University of Melbourne & ARC Center of Excellence (ADM+S) *Nov. 2022 - Jan. 2024*
 - Testing implications of data privacy using unlearnable examples and their vulnerability to diffusion models.
 - Researching the definitions of fairness in generative modeling.
 - Supervision of Ph.D. students on topological data analysis and anomaly detection.
 - Supervision of master students on efficient training of neural networks with coresets selection.

- **Graduate Research Student** Melbourne, Australia
The University of Melbourne *Jun. 2019 - May 2023*
 - Design and implementation of various types of generative models (normalizing flows, generative adversarial networks, and diffusion models) for low and high-dimensional data.
 - Design and implementation of robust and efficient learning frameworks for defending neural networks against backdoor and adversarial attacks.
 - Design and implementation of an incognito black-box adversarial attack exploiting the data distribution.

- **Applied Scientist I** Melbourne, Australia
Amazon *Aug. 2021 - Jan. 2022*
 - Generative modeling for 3D image attribute editing.

EDUCATION

- **The University of Melbourne** Melbourne, Australia
Ph.D. in Computing and Information Systems *Jun. 2019 - May 2023*
 - **Supervisors:** Dr. Sarah Erfani, Prof. Christopher Leckie

- **Sharif University of Technology** Tehran, Iran
M.Sc. in Electrical Engineering-Communications System. *Sep. 2015 - Sep. 2017*
 - **GPA:** 18.89/20.0 (4.00/4.00)

- **The University of Tehran** Tehran, Iran
B.Sc. in Electrical Engineering-Telecommunications. *Sep. 2011 - Sep. 2015*
 - **GPA:** 18.33/20.0 (3.92/4.00)

PUBLICATIONS

- H. M. Dolatabadi**, S. Erfani, and C. Leckie, “The Devil’s Advocate: Shattering the Illusion of Unexploitable Data using Diffusion Models,” in *Proceedings of the IEEE Conference on Secure and Trustworthy Machine Learning (SatML)*, 2023. (Link)
- H. M. Dolatabadi**, “A Novel Perspective on Robustness in Deep Learning,” Doctoral Dissertation, School of Computing and Information Systems, the University of Melbourne, 2023. (Link)
- H. M. Dolatabadi**, S. Erfani, and C. Leckie, “Adversarial Coreset Selection for Efficient Robust Training,” *International Journal of Computer Vision (IJCV)* (**IF=19.5**), vol. 131, no. 10, pp. 3307-3331, 2023. (Link)
- H. M. Dolatabadi**, S. Erfani, and C. Leckie “COLLIDER: A Robust Training Framework for Backdoor Data,” in *Proceedings of the 16th Asian Conference on Computer Vision (ACCV)*, pp. 3893-3910, 2022. (Link)
- H. M. Dolatabadi**, S. Erfani, and C. Leckie “ ℓ_∞ -Robustness and Beyond: Unleashing Efficient Adversarial Training,” in *Proceedings of the 17th European Conference on Computer Vision (ECCV)*, pp. 467-483, 2022. (Link)
- H. M. Dolatabadi**, S. Erfani, and C. Leckie “AdvFlow: Inconspicuous Black-box Adversarial Attacks using Normalizing Flows,” in *Proceedings of the 34th Conference on Neural Information Processing Systems (NeurIPS)*, pp. 15871-15884, 2020. (Link)
- H. M. Dolatabadi**, S. Erfani, and C. Leckie “Black-box Adversarial Example Generation with Normalizing Flows,” in *the ICML Workshop on Invertible Neural Networks, Normalizing Flows, and Explicit Likelihood Models (INNF+)*, 2020. (Link)
- H. M. Dolatabadi**, S. Erfani, and C. Leckie “Invertible Generative Modeling using Linear Rational Splines,” in *Proceedings of the 23rd International Conference on Artificial Intelligence and Statistics (AISTATS)*, pp. 4236-4246, 2020. (Link)
- H. M. Dolatabadi** and A. Amini, “Deterministic Design of Toeplitz Matrices with Small Coherence Based on Weyl Sums,” *IEEE Signal Processing Letters* (**IF=4.6**), vol. 26, no. 10, pp. 1501-1505, 2019. (Link)
- H. M. Dolatabadi** and A. Amini, “A Sampling Theorem for Convex Shapes with Algebraic Boundaries,” in *Proceedings of the International Conference on Sampling Theory and Applications (SampTA)*, pp. 499-503, 2017. (Link)

HONORS AND AWARDS

- Awarded outstanding reviewer award (top 2%) at the *International Conference on Computer Vision (ICCV 2023)*.
- Runner-up team at the *ADM+S Hackathon* and awarded 6k AUD in research fundings for the project “Polls and Prejudices: Investigating Bias in LLM-Generated Political Personas.”
- Awarded the *DAAD AINet Postdoctoral Fellowship* in Generative Modeling.
- Awarded outstanding reviewer award at the *Asian Conference on Computer Vision (ACCV 2022)*.
- Admitted to *Machine Learning Summer School (MLSS 2020)* at the Max Planck Institute for Intelligent Systems, Tübingen, Germany (acceptance rate: 13.84%).
- Awarded a *Melbourne Research Scholarship* to pursue Ph.D. at the University of Melbourne, Australia.
- Ranked 2nd among 33 Communication Systems students at Electrical Engineering Department, Sharif University of Technology, Tehran, Iran.
- Ranked 15th (top 0.2%) in the *Iranian Nationwide University Entrance Exam* for postgraduate studies in Communication Engineering.
- Recognized as the *Outstanding Talent* at University of Tehran and awarded admission to the M.Sc. program.

- Ranked 380th (top 0.15%) among more than 250,000 participants of the *Iranian Nationwide University Entrance Exam* for undergraduate studies.

TEACHING EXPERIENCE

- **Statistical Machine Learning** The University of Melbourne
Tutor *Semester 1 2022*
- **Compressed Sensing** Sharif University of Technology
Teaching Assistant *Spring 2017*
- **Signals and Systems** Sharif University of Technology
Teaching Assistant *Spring 2017*
- **Engineering Mathematics** Sharif University of Technology
Teaching Assistant *Fall 2017*

SKILLS

Programming	Python (PyTorch, TensorFlow, OpenCV, SciPy, SkLearn), C (familiar), MATLAB
Operating Systems	Linux (Ubuntu), Windows
Cloud Services	AWS (EC2, S3, IAM)
Others	Git, MySQL (familiar)
Languages	English (fluent, PTE Academic score of 90/90), Persian (native), Arabic (basic)

INVITED TALKS

- **Security and Privacy of Large Language Models** Security Analytics Subject
University of Melbourne, Parkville, Australia. *Oct. 2023*
- **A Novel Perspective on Robustness in Deep Learning** AINet Postdoctoral Event
ITWM Fraunhofer, Kaiserslautern, Germany. *Sep. 2023*
- **A Novel Perspective on Robustness in Deep Learning** AINet Postdoctoral Event
Technical University of Kaiserslautern, Germany. *Sep. 2023*
- **Publishing at AI Venues** ADM+S HDR Workshop
RMIT University, Melbourne, Australia. *Mar. 2023*
- **Shattering the Illusion of Unexploitable Data using Diffusion Models** ADM+S Machines Meeting
RMIT University, Melbourne, Australia. *Mar. 2023*

SERVICE

Invited Reviewer NeurIPS 2021-23, ICLR 2022-24, ICML 2023-24, AISTATS 2022-24, CVPR 2024, ICCV 2024, ACCV 2022, IEEE TPAMI, TMLR.