

Hadi Mohaghegh Dolatabadi

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RESEARCH INTERESTS

Generative Modeling, Robust Machine Learning, Unsupervised Learning, Computer Vision

PROFESSIONAL EXPERIENCE

- **Applied Scientist Intern** Melbourne, Australia
Amazon Science *Aug. 2021 - Jan. 2022*
 - Generative modeling for 3D image attribute editing.
- **Graduate Research Assistant** Melbourne, Australia
The University of Melbourne *June 2019 - Present*
 - 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.

EDUCATION

- **The University of Melbourne** Melbourne, Australia
Ph.D. in Computing and Information Systems *June 2019 - Present*
 - **Supervisors:** Dr. Sarah Erfani, Prof. Christopher Leckie
- **Sharif University of Technology** Tehran, Iran
M.Sc. in Electrical Engineering. *Sep. 2015 - Sep. 2017*
 - **GPA:** 18.89/20.0 (4.00/4.00)
- **The University of Tehran** Tehran, Iran
B.Sc. in Electrical Engineering. *Sep. 2011 - Sep. 2015*
 - **GPA:** 18.33/20.0 (3.92/4.00)

HONORS AND AWARDS

- Accepted to *Machine Learning Summer School (MLSS) 2020* at the Max Planck Institute for Intelligent Systems, Tübingen, Germany (acceptance rate: 13.84%).
- Awarded a Graduate 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.

PUBLICATIONS

- H. M. Dolatabadi**, S. Erfani, and C. Leckie “COLLIDER: A Robust Training Framework for Backdoor Data,” in *Asian Conference on Computer Vision (ACCV)*, 2022. (Under Review)
- 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)*, 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)*, 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)*, 2020. (Link)
- H. M. Dolatabadi** and A. Amini, “Deterministic Design of Toeplitz Matrices with Small Coherence Based on Weyl Sums,” *IEEE Signal Processing Letters*, vol. 26, no. 10, pp. 1501-1505, Oct. 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)

TEACHING EXPERIENCE

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|---|---|
| • Statistical Machine Learning
<i>Tutor</i> | The University of Melbourne
<i>Semester 1 2022</i> |
| • Compressed Sensing
<i>Teaching Assistant</i> | Sharif University of Technology
<i>Spring 2017</i> |
| • Signals and Systems
<i>Teaching Assistant</i> | Sharif University of Technology
<i>Spring 2017</i> |
| • Engineering Mathematics
<i>Teaching Assistant</i> | Sharif University of Technology
<i>Fall 2017</i> |

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, TOEFL iBT score of 113/120), Persian (native), Arabic (basic)

SERVICE

Invited Reviewer	NeurIPS 2021-22, ICLR 2022-23, AISTATS 2022-23, ACCV 2022, IEEE TPAMI
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REFERENCES

- Sarah Erfani** Senior Lecturer (Assistant Professor)
Department of Computing and Information Systems, The University of Melbourne
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- Christopher Leckie** Professor
Department of Computing and Information Systems, The University of Melbourne
Email: caleckie@unimelb.edu.au
Tel: +61-3-8344-1413