

Imtiaz Masud Ziko

✉ ziko.iut@gmail.com

🌐 <https://imtiazziko.github.io/>

🐙 <https://github.com/imtiazziko>

🌐 <http://www.linkedin.com/in/imtiazmasud>

Employment History

- Jan 2021 – Present 📌 **Lead R&T, AI.** Thales Digital Solutions Inc, Montreal , Canada.
- Sept 2020 – Dec 2020 📌 **Postdoctoral Researcher.** Ecole de Technologie Supérieure (ETS), Montreal , Canada.
Projects: Representation Learning, Clustering, Fair clustering, Semi-Supervised Learning, Few-shot learning.
- Jan 2015 – Dec 2015 📌 **Lecturer.** Computer Science Department, American International University-Bangladesh.
Courses taught: C/C++, Algorithms, Computer Graphics, Computer vision and pattern recognition.
- Jan 2014 – Jul 2014 📌 **Research Intern.** Hubert Curien Laboratory – UMR CNRS 5516, France.
Research topic: Subspace learning for Bag of Words (BOW) model.
- Oct 2010 – Dec 2010 📌 **Software Developer Intern** Right Brain Solution Ltd, Bangladesh.
Project: Developed CRM ticket management system using PHP (Codeigniter) and MySQL.

Education

- May 2016 – July 2020 📌 **PhD., Machine Learning, École de Technologie Supérieure (ETS), Montréal, Canada.**
Thesis title: Flexible and Scalable Models for Clustering and Few-Shot Learning.
External committee member: Jean-Christophe Pesquet, University Paris-Saclay, Inria.
- Sept 2012 – Oct 2014 📌 **MSc. Norwegian University of Science and Technology, University of Granada and University Jean Monnet.**
Erasmus Mundus masters in Color in Informatics and Media Technology (CIMET) specializing in computer vision.

Skills and Interest

- | | |
|-------------------------|---|
| Coding | 📌 Python, C++, MATLAB, |
| Deep Learning Libraries | 📌 PyTorch |
| Misc. tools | 📌 PyCharm, Streamlit, Git, Inkscape, \LaTeX , Numpy, Pandas, Numba, Multiprocessing, Cython, Scipy, Opengl, OpenMP, Scikit-learn, Cuda kernel, Matplotlib. |
| Databases | 📌 MySQL, SQLite. |
| Web Dev | 📌 HTML, CSS, PHP, JavaScript, Codeigniter. Django |
| Languages | 📌 English, French (basic), Bengali (native). |
| Organizer | 📌 IPTA 2017 (ETS), ICT FEST 2011 (IUT) |
| Review activity | 📌 MIDL 2020, MAIS 2020, ICCV 2019, IPTA 2018, 2017. |

Skills and Interest (continued)

Research experience & Interests

■ Unsupervised/Semi-supervised Learning, Explainable AI, Graph Neural Network, Few-shot Learning, Fairness in learning, Domain Adaptation, Representation Learning, Scalable and efficient clustering, Convex optimization.

Publications

- 1 **Ziko, I. M.**, Yuan, J., Granger, E., & Ayed, I. B. (2021). Variational fair clustering. *AAAI Conference on Artificial Intelligence*. <https://arxiv.org/pdf/1906.08207.pdf>
- 2 Boudiaf, M., **Ziko, I. M.**, Rony, J., Dolz, J., Piantanida, P., & Ayed, I. B. (2020). Transductive information maximization for few-shot learning. *Neural Information Processing Systems (NeurIPS)*.
<https://arxiv.org/pdf/2008.11297.pdf>
- 3 **Ziko, I. M.**, Dolz, J., Granger, E., & Ayed, I. B. (2020). Laplacian regularized few-shot learning. *International Conference on Machine Learning (ICML)*. <https://arxiv.org/pdf/2006.15486.pdf>
- 4 Boudiaf, M., Rony, J., **Ziko, I. M.**, Granger, E., Pedersoli, M., Piantanida, P., & Ayed, I. B. (2020). A unifying mutual information view of metric learning: Cross-entropy vs. pairwise losses [Spotlight]. *European Conference on Computer Vision (ECCV)*. <https://arxiv.org/pdf/2003.08983.pdf>
- 5 **Ziko, I. M.**, Granger, E., & Ayed, I. B. (2018). Scalable laplacian k-modes [Spotlight]. *Neural Information Processing Systems (NeurIPS)*.
<https://papers.nips.cc/paper/8208-scalable-laplacian-k-modes.pdf>
- 6 **Ziko, I. M.**, Beigpour, S., & Hardeberg, J. Y. (2014). Design and creation of a multi-illuminant scene image dataset. *International Conference on Image and Signal Processing (ICISP)*.
https://link.springer.com/chapter/10.1007/978-3-319-07998-1_61

Projects

- | | |
|------|---|
| 2020 | ■ Few-shot learning.
Published in ICML and Neurips 2020.
Github: https://github.com/imtiaziko/LaplacianShot |
| | ■ Metric Learning.
Published in ECCV 2020 as spotlight.
Github: https://github.com/jeromerony/dml_cross_entropy |
| 2019 | ■ Flexible and scalable clustering method with fairness constraints for ethical decisions.
Github: https://github.com/imtiaziko/Variational-Fair-Clustering |
| | ■ Robust loss functions for domain adaptive person re-identification. |
| 2018 | ■ Scalable joint graph clustering and density mode estimation for large scale applications.
Published in Neurips 2018 as spotlight.
Github: https://github.com/imtiaziko/SLK |
| 2014 | ■ Spectral subspace clustering for visual dictionary creation in the context of image classification.
Published in ACPR 2015.
Hubert Curien Laboratory, France. |

(continued)

- Design and Creation of a Multi-Illuminant Scene Image Dataset for Color Constancy Research.
Published in ICISP 2014.
The Norwegian Colour and Visual Computing Laboratory - NTNU, Norway.
- Waste sorting using multi-spectral imaging and machine learning.
In collaboration with ZenRobotics (Finland), University of Eastern Finland and Norwegian University of Science and Technology.

Awards

- 2020 ■ Mention in **ÉTS honor list**.
- 2012 – 2014 ■ **Erasmus Mundus Category A scholarship** of an amount of 48,000 Euros for Master program by European Commission, selected among 500 candidates.
- 2008 – 2011 ■ Four years govt. scholarship for getting GPA 5.00/5.00 in H.S.C exam.

Talks

- July 2020 ■ *Laplacian Regularized Few-shot Learning* at ICML 2020 (Virtual).
- Dec 2019 ■ *Fairness in unsupervised Learning* at CAÉC ÉTS, Montréal.
- Dec 2018 ■ *Scalable Laplacian K-modes* at Neurips 2018, Montréal.

References

Available on Request