

# Imtiaz Masud Ziko

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🌐 <https://imtiazziko.github.io/>

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## Employment History

- Jan 2021 – Present    📌 **Research & Technology Lead, AI.** Thales Digital Solutions Inc, 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.  
Thesis advisor: Ismail Ben Ayed & Eric Granger, ETS Montreal.  
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             | 📌 Kubernetes, Docker, PyCharm, Streamlit, Git, Inkscape, $\LaTeX$ . |
| Databases               | 📌 MySQL, SQLite.  |
| Web Dev                 | 📌 HTML, CSS, PHP, JavaScript, Django, Flask                         |
| Languages               | 📌 English, French (basic), Bengali (native).                        |
| Organizer               | 📌 IPTA 2017 (ETS), ICT FEST 2011 (IUT)                              |
| Review activity         | 📌 Neurips 2021, TPAMI 2021, 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.**, 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>
- 2 **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>
- 3 **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>
- 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.**, Boudiaf, M., Dolz, J., Granger, E., & Ayed, I. B. (2021). Transductive few-shot learning: Clustering is all you need? *ArXiv 2021*. 🔗 <https://arxiv.org/pdf/2106.09516.pdf>
- 6 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>
- 7 Boudiaf, M., Kervadec, H., **Ziko, I. M.**, Piantanida, P., Ayed, I. B., & Dolz, J. (2021). Few-shot segmentation without meta-learning: A good transductive inference is all you need? *Computer Vision and Pattern Recognition (CVPR)*.  
🔗 [https://openaccess.thecvf.com/content/CVPR2021/papers/Boudiaf\\_Few-Shot\\_Segmentation\\_Without\\_Meta-Learning\\_A\\_Good\\_Transductive\\_Inference\\_Is\\_All\\_CVPR\\_2021\\_paper.pdf](https://openaccess.thecvf.com/content/CVPR2021/papers/Boudiaf_Few-Shot_Segmentation_Without_Meta-Learning_A_Good_Transductive_Inference_Is_All_CVPR_2021_paper.pdf)
- 8 **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](https://link.springer.com/chapter/10.1007/978-3-319-07998-1_61)




## Projects

- |      |   |
|------|---|
| 2020 | ■ Few-shot learning.<br>Published in ICML and Neurips 2020.<br>Github: <a href="https://github.com/imtiaziko/LaplacianShot">https://github.com/imtiaziko/LaplacianShot</a>  |
|      | ■ Metric Learning.<br>Published in ECCV 2020 as spotlight.<br>Github: <a href="https://github.com/jeromerony/dml_cross_entropy">https://github.com/jeromerony/dml_cross_entropy</a>   |
| 2019 | ■ Flexible and scalable clustering method with fairness constraints for ethical decisions.<br>Github: <a href="https://github.com/imtiaziko/Variational-Fair-Clustering">https://github.com/imtiaziko/Variational-Fair-Clustering</a> |
|      | ■ Robust loss functions for domain adaptive person re-identification.   |




## (continued)

- 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.
-  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.