BIOGRAPHICAL SKETCH

Diganta Misra
Research Student and Founder
MILA/ Landskape/ VITA/ Morgan Stanley
Montréal, Quebec
Canada

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Blog: https://blog.paperspace.com/author/diganta/

(a) Education

MILA	Montréal, Canada	Machine Learning	Research MSc, 2023 (Advisor - Irina Rish)
UdeM	Montréal, Canada	CS	MSc, 2023 (Advisor - Irina Rish)
KIIT	Bhubaneswar, India	EEE	B.Tech, 2020 (Advisor - Bhargav Appassani)

(b) Experience Overview

2022 – present	Researcher, Morgan Stanley
2021 – present	Visiting Research Scholar, VITA (UT-Austin)
2020 – present	Research Associate, Laboratory of Space Research - Hong Kong University
2019 – present	Founder and Researcher, Landskape
2020 – 2021	Machine Learning Engineer, Weights & Biases
2020 – 2021	Deep Learning Content Developer, Paperspace
2018 – 2018	Deep Learning Research Intern, Bennett University
2018 – 2018	Data Science Intern, CSIR-CDRI
2018 – 2018	Intern, Indian Institute of Technology - Kharagpur
2017 – 2017	Exchange Student, Bangkok University

(c) Research and Professional Experience

Researcher, Morgan Stanley

Working with Kashif Rasul and Sahil Garg on topics of time series forecasting using continual learning regime.

Visiting Research Scholar, VITA, UT-Austin

Working under the guidance of Dr. Zhangyang Wang on the topics of sparsity in neural networks.

Founder, Landskape

Landskape is a small deep learning fundamental research group I founded in September 2019 along with the help of Kris Akira Stern (HKU).
At Landskape, we work on deep learning theory, optimization, attention mechanisms, non-linear dynamics, continual learning and efficient network design.
Our group includes students and researchers from MILA, UIUC, IIT-G, KAIST, HKU and CMU with collaborators from Google Brain, Imperial College and NUS.
At Landskape, I am principally supervised by Assc. Prof. Jaegul Choo (KAIST).
Visit our website for further details on publications and members/ affiliates.

Machine Learning Engineer, Weights & Biases

Working in the Frameworks and Integration team. As a Machine Learning Engineer, I primarily focus on ensuring seamless integration of the W&B API into several deep learning frameworks.
Also responsible for reproducibility pipelines.

Research Associate, Laboratory of Space Research - Hong Kong University (LSR-HKU)

Working on Planetary Nebulae analysis using deep learning and computer vision based approaches. Our goal is to use generative modelling to understand the different structural variations of PNe as well as constructing an end-to-end pipeline for visually analyzing PNe as well as develop their spectrum profiles.
Mentored by Prof. Quentin A. Parker.
Visit my LSR Profile on the HKU LSR directory website.

Deep Learning Content Developer, Paperspace

Working on constructing extensive reviews of state of the art and novel papers in the domain of computer vision along with code implementation in PyTorch using the resources offered by Paperspace Gradient. Currently involved in constructing a blog series on *Attention Mechanisms in Computer Vision* along with reviews of papers from CVPR and ECCV 2020. Authored articles can be viewed on my profile.

Deep Learning Research Intern, Bennett University

Successfully completed the *NVIDIA DLI workshop* and the *Artificial Intelligence and Deep Learning Workshop* by Bennett University in collaboration with University College London and AWS Educate. I worked as the group leader of a team of five under the co-supervision of Prof. Dr. Deepak Garg and Dr. Suneet Gupta. I was a part of 2 research projects during the duration of the internship which include:

- Class imbalanced visual recognition of galaxy images.
- Fine grained classification of crop based diseases.

The projects included documentation and final week panel presentation.
In addition, I was selected to be a part of the LeadingIndia.AI team where I supervised the hands-on labs for workshops conducted at *Galgotias University* and *Charusat University* along with conducting basic AI training sessions.
Further, I was invited as a collaborator for a project "Large-Scale Meta-Analysis of Genes Encoding Pattern in Wilson's Disease" with *Indian Institute of Technology, Varanasi (IIT-BHU)* under the supervision of Dr. Amrita Chaturvedi.

Data Science Intern, CSIR-CDRI †

During this internship, I was involved in building the analytical pipeline, data collection, pre-processing of data, cleaning of data, Geo-spatial Analysis of data and Document writing for the project on understanding demographics of Venture Capital and Early Seed Investments. As a part of a team of three, I was advised and mentored by Dr. Sukant Khurana.

† Council of Scientific and Industrial Research - Central Drug Research Institute.

Intern, Indian Institute of Technology - Kharagpur

Studied basic algorithmic techniques using functional programming languages - Lisp and Prolog under the guidance of Assc. Prof. Pawan Kumar.

Exchange Student, Bangkok University

Served as a primary instructor for cultural engagements along with teaching basic english and computer science to primary grade students at RangsonWittaya School, Nakhon Sawan under the AIESEC SDG #4 programme. Was also part of culture exchange, entrepreneurship and social service programs at Bangkok University.

(d) Publications (Google Scholar)

1. *Diganta Misra*, **Mish: A Self Regularized Non-Monotonic Activation Function**, Published at the *31st British Machine Vision Conference (BMVC)*, 2020.
2. *Diganta Misra*, Trikay Nalamada, Ajay Uppili Arasanipalai, and Qibin Hou, **Rotate to Attend: Convolutional Triplet Attention Module**, Accepted to *IEEE Winter Conference on Applications of Computer Vision (WACV)*, 2021.
3. *Diganta Misra*, Rahul Pelluri, Vijay Kumar Verma, Bhargav Appasani and Nisha Gupta, **Genetic Algorithm Optimized Inkjet Printed Electromagnetic Absorber on Paper Substrate**, Published at *IEEE International Conference on Applied Electromagnetics, Signal Processing and Communication (AESPC)*, 2018.

(e) Invited Talks and Podcasts

1. **Podcast** - *Mish: A Self Regularized Non-Monotonic Activation Function* - Link
   Episode 7 with Miklos Toth on the Machine Learning Cafe podcast.
2. **Invited Talk** - *Mish: A Self Regularized Non-Monotonic Activation Function* - Link
   Presented internally at the Sicara weekly deep learning club.
3. **Contributed Talk** - *Non-Linear Dynamics in Neural Networks*
   Presented at the Deep Learning colloquium at the University of Athens.
4. **Invited Talk** - *Mish: A Self Regularized Non-Monotonic Activation Function* - Link
   Presented at the Computer Vision Talks.
5. **Invited Corporate Talk** - *Mish: A Self Regularized Non-Monotonic Activation Function*
   Presented virtually at the Bangalore Robert Bosch office.
6. **Podcast** - *Chatting with a data Science team ft DeepWrex Technologies* - Link
   Episode 20 with Ankit Jha on The World Is Ending Podcast.
7. **AMA** - *Mish: A Self Regularized Non-Monotonic Activation Function*
   Ask Me Anything (AMA) session on my research with the Weights&Biases (WandB) team.

(f) Research Interests

Non-Linear Dynamics	Mean Field Theory	Convex Optimization
Abstract Algebra	Group Theory	Morita Equivalence
Mathematical Modelling	Topology	Algebraic Geometry
Attention Mechanisms	Efficient Network Design	Self Supervised Learning
Continual Learning	Image Reconstruction	Autoencoders
Visual Recognition	Deep Learning Theory	Adversarial Robustness

(g) Languages

English Odia Hindi

(h) Additional Experience

I also served as Content Writer, Growth Associate, Developer, Volunteer and Editor at firms like Digital Vidya, Digimyx, COSO IT, Criotam Technologies Private Limited, United Nations Volunteers (UNV), AIESEC Bhubaneswar Chapter and The Insider Tales.

(i) Projects

For projects and open source contributions, please visit my GitHub Profile.

(j) Achievements and References

References, achievements and certifications are available upon request.