Adhilsha Ansad

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Introduction

I am enrolled as a final-year student in the Integrated Master of Science program at the National Institute of Science Education and Research (NISER), Bhubaneswar. I am extending my growing career into the field of Deep Learning and Computer Science while exploring any possibilities for inter-disciplinary possibilities.

Education

National Institute of Science Education and Research (NISER), Bhubaneswar, India, Integrated M.Sc. in Physical Science (major) and Computer Science (minor) — Dec 2020 – Present

- CGPA: 8.03/10.0 (Complete Transcript, CS Transcript)
- **CS Coursework:** Programming and Data Structures, Theory of Computation, Discrete Structures and Computation, Design and Analysis of Algorithms, Machine Learning, Advanced Machine Learning, Parameterized Algorithms

Coursera education — Online

- Supervised Machine Learning: Regression and Classification (certificate)
- Advanced Learning Algorithms (certificate)

Projects

Large Neural Networks at a fraction — github:quatLT23

- A project on reducing and testing the Lottery Ticket Hypothesis on a Large Neural Network using a combination of Pruning and Quaternion architecture. Publishing a conference paper in NLDL 2024.
- Tools Used: Deep Learning, PyTorch, Data processing, Python

Oversampling in Heterogeneous graphs — gitlab.niser:23-hetero-smote

- Extending SMOTE to heterogeneous graph networks to overcome class imbalance issues. Paper under review.
- Tools Used: Deep Learning, Graph Networks, Data Processing, PyTorch, Python

Long context LLM support — Current

- Developing a memory architecture for Large Language Models (LLMs) to support long context. Ongoing work.
- Tools Used: Natural Language Processing (NLP), Large Language Models (LLMs), PyTorch, Python

Experience

Paper Presentation - NLDL 2024, UiT Norway — Jan 2024

- Presented the paper "Large Neural Networks at a Fraction" at the Northern Lights Deep Learning (NLDL) conference 2024 as both a presentation and as a poster. (invite, slides, poster)

SMLab Talks, NISER Bhubaneswar, India — 2024

- Gave a talk on 1-bit LLMs and BitNet, a new compressed Large Language Models paradigm. (slides)
- Gave a talk on Vision-Mamba, a variation of the Mamba model series, famous for its competence over transformers. (notes)

Mentoring Students, NISER Bhubaneswar, India — 2023 - 2024

- Mentored 2 Machine Learning Projects in the CS460 (2024) course under Dr. Subhankar Mishra.
- Assisted in the First Year of CS Labs (2023) as TA under Dr. Anup Kumar Bhattacharya.

ACM WinterSchool, IIT Patna, India — Dec 2023

- Participated in the ACM Winter School on "Recent Trends in AI/ML for Industry 4.0" hosted by the Indian Institute of Technology Patna and partly sponsored by Google Research India. (certificate)

Publications

Large Neural Networks at a Fraction   Jan 2024

Aritra Mukhopadhyay[†], *Adhilsha Ansad*[†], Subhankar Mishra

[†]Equal contribution

Proceedings of the *5th Northern Lights Deep Learning Conference (NLDL)*, PMLR 233:165-173
(PMLR site, openreview)

Additional Experience And Awards

INSPIRE Scholarship (2020-Present)

Technologies

Languages: C, Python

Skills: Deep Learning, Supervised Learning, PyTorch, Natural Language Processing (NLP), Large Language Models (LLMs), Data Processing, Graph Networks