

PUNEESH DEORA

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EDUCATION

University of British Columbia

Ph.D. in Electrical and Computer Engineering

2024 -

M.A.Sc in Electrical and Computer Engineering

2022 - 2024

Advisor: Prof. Christos Thrampoulidis

Indian Institute of Technology Roorkee

B. Tech. in Electronics and Communication Engineering

2016 - 2020

Thesis Advisors: Prof. Saumik Bhattacharya & Prof. P. M. Pradhan

RESEARCH INTERESTS

Science of LLMs, ML Theory, Optimization

PUBLICATIONS AND PREPRINTS

Can Transformers Learn Tasks of Varying Complexity In-context?

P. Deora, B. Vasudeva*, T. Behnia*, C. Thrampoulidis

In Preparation

Implicit Bias and Fast Convergence Rates for Self-attention

B. Vasudeva*, **P. Deora***, C. Thrampoulidis

BGPT@ICLR 2024; Under review

On the Training and Generalization of Multi-head Attention

P. Deora*, R. Ghaderi*, H. Taheri*, C. Thrampoulidis

TMLR; HiLD@ICML 2023

Fast Test Error Rates for Gradient Methods on Separable Data

P. Deora*, B. Vasudeva*, V. Sharan, C. Thrampoulidis

HiLD@ICML 2023; ICASSP 2024

On weighted cross-entropy for label-imbalanced separable data: An algorithmic-stability study

P. Deora, C. Thrampoulidis

ICASSP 2023

Compressed Sensing MRI Reconstruction with Co-VeGAN: Complex-Valued Generative Adversarial Network

B. Vasudeva*, **P. Deora***, S. Bhattacharya, P. M. Pradhan

WACV 2022

LoOp: Looking for Optimal Hard Negative Embeddings for Deep Metric Learning

B. Vasudeva*, **P. Deora***, S. Bhattacharya, U. Pal, S. Chanda

ICCV 2021

Structure Preserving Compressive Sensing MRI Reconstruction using Generative Adversarial Networks

P. Deora*, B. Vasudeva*, S. Bhattacharya, P. M. Pradhan

CVPR Workshops 2020

(*equal contribution)

EXPERIENCE

UBC | Graduate Research Assistant

2022-

Advisor: Prof. Christos Thrampoulidis

ISI Kolkata | Visiting Researcher, CVPR Unit

June'20 - June'21

Advisors: Prof. Saumik Bhattacharya & Prof. Umapada Pal

IIT Roorkee | Undergraduate Researcher

June'19 - July'20

Advisors: Prof. Saumik Bhattacharya & Prof. P. M. Pradhan

Thesis: Compressive Sensing MRI Reconstruction using GANs

AWARDS AND ACADEMIC ACHIEVEMENTS

- UBC Four Year Doctoral Fellowship (4YF) *2024*
- Selected for EEML Summer School *2021*
- Singhal's Tech. for Society Award for **best undergraduate thesis** at institute level *2020*
- 3AI Pinnacle Student of the Year Award for **undergraduate thesis** *2020*
- Finalist INAE Innovative Student Projects Award for **undergraduate thesis**, 30 national nominees *2020*
- Secured IIT JEE Advanced **All India Rank 1123**, 99.4 percentile *2016*

SERVICE

- **Reviewer:** ICLR 2024-, NeurIPS 2023-, ICML 2025-, TMLR
- **Volunteer:** ICML 2021, ICLR 2021

TEACHING EXPERIENCE

- TA for ELEC221: Signals and Systems, Spring'23 at UBC

OTHER PROJECTS

- Invariant Risk Minimization and its failure cases; CPSC532S, UBC [\[Report\]](#)
- Low-light Image Enhancement; IIT Roorkee [\[Code, Report\]](#)