VIBHU DALAL

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EDUCATION

Bachelor of Science in Mathematics Dec. 2020 – Oct. 2023
Sri Aurobindo International Centre of Education *Puducherry, India*

Core Modules: Mathematics, Mathematical Statistics, Computer Science, English, French

Higher Secondary Dec. 2018 – Oct. 2020
Sri Aurobindo International Centre of Education *Puducherry, India*

Core Modules: Mathematics, Physics, Chemistry, Computer Science, English, French, Hindi

EXPERIENCE

Research Intern Jun. 2023 – Present
DREAM Lab, University of Illinois Urbana-Champaign *Remote*

- Co-authored a research paper which explores the applications of Optimal Transport theory for the task of dataset distillation *(submitted to CVPR 2024)*
- Worked closely with Dr. Haohan Wang on projects aimed at improving the interpretability of convolutional neural networks

Research Intern Apr. 2023 – Present
Dr. Min Xu's lab, Carnegie Mellon University *Remote*

- Co-authoring a research paper exploring novel approaches to anomaly detection in the context of laboratory automation
- Contributed to the curation of a dataset of over 2500 liquid transfer videos, addressing the dearth of diverse datasets in this domain

Machine Learning Intern Feb. 2022 - Dec. 2023
Telekinesis AI, Technische Universität Darmstadt *Remote*

- Conducted literature review of Human Pose Estimation algorithms and implemented research papers
- Designed and implemented a novel algorithm for unsupervised action segmentation
- Set up a Gazebo simulation environment to simulate Franka Emika's Panda robot using C++
- Helped develop the back-end and front-end software for controlling industrial robots using .NET and C#

PUBLICATIONS

Short-Time Fourier Transform for deblurring Variational Autoencoders
V. Dalal

arXiv preprint arXiv:2401.03166

Dataset Distillation via the Wasserstein Metric
H. Liu, T. Xing, L. Li, ***V. Dalal****, J. He, H. Wang*

arXiv preprint arXiv:2311.18531 ***(submitted to CVPR 2024)***

Additional Coursework

Student under Prof. Vikraman Balaji Feb. 2023 – Present
Chennai Mathematical Institute

Corresponded with Professor Vikraman Balaji and explored a range of topics including Abstract Algebra, Analysis, Linear Algebra, and Topology to establish a robust foundation for graduate-level studies in mathematics.

Certificates

GRE General Test Oct. 2023
Verification link

332 / 340

- Quantitative Reasoning: **168 / 170**
- Verbal Reasoning: **164 / 170**
- Analytical Writing: **4 / 6**

DELF B2 Jan. 2024
Verification link

91 / 100

- Listening: **21.5 / 25** | Reading: **21.5 / 25** | Speaking: **25 / 25** | Writing: **23 / 25**

Honors and Awards

Sri Aurobindo International Centre of Education

- Winner of the **Best Student Prize**: 2023
- 11 Time Winner of the **Prize for Academic Excellence**: 2013 - 2023
- Winner of the Freshman **Short Story Competition**: 2020

Skills

Languages: English (C1), French (B2), Hindi (Native)
Programming: Python, C/C++, SQL, Matlab, Bash, JavaScript
Libraries and Frameworks: Pytorch, TensorFlow, NumPy, Eigen, MySQL
Computer and Software Skills: Git, Linux, LaTeX, Blender, Gazebo

Extra-curricular activities

High School Science Club Jan. 2019 – Mar. 2020
Formed a group of students interested in science and dicussed breakthroughs and research papers in physics and chemistry

Editor-in-chief of the Annual Students' Magazine Jun. 2019 – Oct. 2019
Created the 2019th edition of the annual students' magazine with a team of students

Piano Dec. 2018 – Oct. 2023
Western classical and contemporary

Physical Education Dec. 2012 – Dec 2023
Gymnastics, Athletics, Aquatic Sports, Games (Football, Basketball, Volleyball, Hockey and Combative Sports)