Jayesh Vasudeva

About Me | Blogs
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LinkedIn | GitHub | Twitter

EDUCATION

NSIT, DU
BEng in Instrumentation and control
July 2018 - May 2022(expected) | Dwarka, ND
SGPA: 8.5 / 10.0

DPS, R.K. PURAM
Grad. May 2018| ND, India
Score(%age): 95.6% in PCM(CS)

SKILLS

PROGRAMMING
Primary Skills:
Python • C++ • Swift
Matlab • Octave • LaTeX
Secondary Skills:
C • Shell • Linux/Unix
Frameworks:
Pytorch • OpenGL • Pandas • Matplotlib

MATHEMATICS & STATISTICS
Linear Algebra • calculus • Multivariate calculus
Probability Distribution • optimization techniques

COURSEWORK HIGHLIGHTS

UNDERGRADUATE
AI techniques and Applications
Fundamentals of programming
Signal and Systems
Microprocessors
Single Variate Calculus
Numerical Methods
Matrix calculus + Probability
(Research Asst.)
Glaucoma Detection and Segmentation(computer Vision)

SIDE COURSES/MOOCS
Practical deep learning for coders(v4)
AIET-IIT Hyderabad
Intel Edge AI Scholarship Foundation Course
Neuromatch Academy DL course(summer 2021)

POSITION OF RESPONSIBILITY

CS CHAPTER CHAIR
IEEE-NSUT (2020-2021)

- I was the head of the team responsible for conducting and managing computer science events such as Hackathons, Webinars, etc.
- I also started a small group like Yannic Kilcher's to discuss recent research in Computer science(machine learning and non-machine learning based).

EXECOMM MEMBER
IEEE-NSUT (2019-2020)

- I was responsible for conducting SIGs, looking for guest speakers for talks(virtual 2020 onwards).

MUN MEMBER
Debating Society (2018 - 2019)

- I used to compete on Model United Nations Competitions.

EXPERIENCE

CNS, IISC | Research Asst.
Jan 2021 - Present | Bangaluru, India

- Study about animal behaviour using state-of-the-art deep learning techniques.
- Implement Supervised and Unsupervised to analyze human annotated dataset and build methods to study data, in order to differentiate between different mice reponses.

Responsibilities:
Implement Computer Vision methods to monitor the movement of mice as we perform different experiments on them, like manipulating neural circuits.
Currently working on a manuscript for biorxiv.

DRDO | Research Asst.
Sept 2020 - Dec 2020 | ND, Delhi

- selected to research on geometry of Biometric data(fingerprints, face, etc.)
- studied about novel methods to generate cancelable biometrics and improve their security

Responsibilities:
To propose a multi-modal novel method to generate cancelable biometrics
Evaluate performance of other existing methods

IIT HYDERABAD | Junior Research Asst.
Dec 2019 – May 2020 | Hyd, Telangana

- Top performer at AIET(2018), chosen to work under faculty @IIT H
- Study about various Adversarial Attack and Defense strategies on CNNs and Vanilla NNs
- Experimented with a variety of optimizers; e.g., COntinuous COin toss (COCOB), CONLIN, etc.

Responsibilities:
Implement the existing adversarial attacks and defences to make the networks robust.
Find measures to certify the robustness of the model.

ACADEMIC PROJECTS

CLASSIFYING BEHAVIOUR WITH GRAPH NEURAL NETWORKS | Dr. Tanmay Nath - John Hopkins University | Ongoing |
Working with Dr. Tanmay Nath to classifying poses based on keypoints, mainly to classify between responses in animals. To differentiate between key responses from a collection of responses observed by the user. We are using DGL and PyTorch Geometric.

UNDERSTANDING NOCIFENSIVE BEHAVIOUR IN MICE | Barik Lab | Preprint to be released |
Worked with Dr. Arnab Barik to implement state-of-the-art Computer vision algorithms to study behaviour of mice. I also used matplotlib and statistical analysis extensively to draw conclusive differences in behaviour under different conditions.

KINSHIP DETECTION | VIGIL LAB - IITH | Github
Worked with a group of experts from VIGIL lab to help Northeastern SMILE Lab detect similarity between faces of the blood-related people, for which we used siamese network.
Guided by Nazil Perveen

TEXTVISARD | Github
A unity based application, to help specially-abled people read and understand concept via visualisation and images, WE(Hackathon Team) used Unity's CV API to extract live text and later summarise it using huggingface transformers, followed by NER to obtain essential keywords to extract meaningful images from google image search API.

AWARDS

2019	Winner	IBM Drone Challenge(Tello Drone)
2019	Scholarship	Intel Edge AI
2018	top 5/ 200	AIET - IIT Hyderabad
2017	Qualified	Zonal Computing Olympiad(New Delhi)
2020	Accepted book chapter	Applications of Computational Intelligence in Multi-Disciplinary Research

PUBLICATIONS

[1] J. Vasudeva, P. Rastogi, and J. Yadav. Glaucoma detection and segmentation as computer aided design: A review and study. In 2020 IEEE 17th India Council International Conference (INDICON) (INDICON2020), New Delhi, India, Dec. 2020.

[2] J. S. Vasudeva, S. Bhargava, and D. K. Sharma. Optimization techniques and computational intelligence with emerging trends in cloud computing and internet of things. In Applications of Computational Intelligence in Multi-Disciplinary Research, pages 47–66. Elsevier, 2022.