Shanu Vashishtha

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EDUCATION

UMASS, AMHERST
MS in COMPUTER SCIENCE
Sep'18-May'20

IIT KANPUR
BTech in Chemical Engineering
with minor in Computer Science
Jul'12-Jun'17

ACHIEVEMENTS

- Won the 2018 MIT Media Labs Cityrobotics Design-a-Hackathon
- Recipient of the 2012 Government of India INSPIRE scholarship
- Awarded Bronze medal in 2010 Regional Mathematics Olympiad

COURSEWORK

- Machine Learning
- Neural Networks
- Reinforcement Learning
- Computer Vision
- Human Computer Interaction
- Natural Language Processing

TECHNICAL SKILLS

- Python - Pytorch, Numpy, Scikit-learn, Matplotlib • C/C++ • MATLAB • Linux

LEADERSHIP ROLES

Coordinator | Counselling Service, IIT Kanpur

- Led a team of 135 students during the 2014 Orientation Programme for the induction of 827 freshmen
- Worked in close liaison with the Institute counsellors to alleviate the mental health problems of students
- Tackled sensitive issues like Suicide Prevention, Addiction and Time management through regular sessions and discussion forums

VOLUNTEER WORK

Center for Data Science | UMass Amherst

- Delivered a web based animal classifier for wildlife camera images

WORK EXPERIENCE

DATA SCIENCE INTERN | Rain Neuromorphics, Bay Area | May'19 –

- Implemented a sparse Transformer model on the Neuromorphic hardware simulations using Pytorch and established the baseline results for English German Neural Machine Translation task
- Performed experiments to transfer weights from a trained network with random neuron-synapse connectivity to an untrained one with different connectivity
- Deduced the most efficient convolution implementation for the novel chip, implemented and tested it on MNIST dataset

SENIOR ENGINEER | Honeywell, Bengaluru | Aug'17 – Aug'18

- Built an obstacle detection framework using OpenCV and integrated it into the existing camera based Visual Docking Guidance System
- Performed extensive tests, addressed failures and prepared the functionality for site deployment ahead of time

INTERN | Computer Vision Center, Barcelona | May'17 – Aug'17

- Established an image processing pipeline with NVIDIA's Jetson TX2, ZED Camera and Raspberry Pi for a small self-driving car
- Implemented real-time Stixel computing algorithm preceded by the depth estimating SGM algorithm
- Designed a simple control algorithm in the car for start, stop and sideway motions which resulted in successful navigation of the test circuit

INTERN | INRIA, Sophia Antipolis | May'16 – Jul'16

- Implemented a person tracking algorithm using tracklet fusion from multiple cameras in the C++ based Scene Understanding Platform
- Performed Deformable Parts Model training for Toyota Smart home and PETS datasets which led to a 5% increase in the tracking accuracy

PROJECTS

MICROSOFT AZURE ML | UMass, Amherst | Jan'19 - May' 19

- Created Jupyter notebooks detailing hyperparameter optimization, metric logging, model deployment and autoML functionality for CIFAR image classification using Azure Machine Learning
- Using the platform's built in hyperdrive run functionality, achieved ~16% improvement in classification accuracy

AIRCRAFT CLASSIFICATION | UMass, Amherst | Sep'18 - Dec' 18

- Implemented VGGNet and Resnet as feature extractors for Bilinear CNN architecture and inferred that VGGNet was the most suited one for classification task on the FGVC-Aircraft dataset