NEHA DAS

Machine Learning Enthusiast

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ONGOING PROJECTS

Master Thesis
Learning state-space models of camera based drones for intrinsically motivated control

PAST PROJECTS

Dynamic Models with IAF
An architecture for modelling a dynamical system with Inverse Autoregressive Flow coupled with Deep Variational Bayes Filter.
(Slightly worse results than the then SOA for Inverted Pendulum Data but with reduced sampling complexity)

3D Human Body Segmentation
A novel method of performing Segmentation of a Human Body represented in 3D Point Cloud into constituent parts using an architecture inspired from Unet and MobileNet.

ICP Analysis
Implementation and analysis of Iterative Closest Point variants such as Projective Matching, Multiresolution Schema, Linearized ICP in C++

Neural Network Visualization using Guided Backprop
Implementation of a web interface that visualizes a deep neural network for protein structure prediction using guided backpropagation

Reimplementation of IWAE
Implementation and training of an Importance Weighted Autoencoder Network for generating MNIST data (achieved results from the paper by Burda et al.)

RGB to Depth
Implementation of an architecture inspired by "Learning fine-scaled depth maps from single RGB images" for extracting depth from RGB images

UNDERGRADUATE PROJECTS

Defending the Tower with the Bee Colony Algorithm
Implemented an interactive game environment and implemented the Artificial Bee Colony Algorithm for the player strategy to showcase its efficiency.

SKILLS

Python | C++ | C | Javascript | MATLAB

Tensorflow | PyTorch | Django (Python) | Docker

EDUCATION

M.S in Informatik
Technische Üniversität München
Oct 2016 – Ongoing | Runnning Grade: 1.4

Relevant Courses
Machine Learning, Deep Learning in Computer Vision, 3D Scanning and Motion Capture, Variational Methods, Medical Augmented Reality, Cloud Computing

B.Tech in Software Engineering
Delhi Technological University
Aug 2009 – May 2013 | First Division with Distinction

PROFESSIONAL EXPERIENCE

Research Intern
Volkswagen Data:Lab
June 2018 – Aug 2018 | Munich, Bayern, Germany

- Setup the inference model for unsupervised control in an embedded system (Jetson TX1) using Tensorflow C APIs.
- Wrote a module for retrieving and appropriately formatting data from the IMX219 cameras attached to the Jetson Module using Video4Linux APIs

Working Student
Chair of Robotics and Embedded Systems, TUM
June 2017 – Mar 2018 | Munich, Bayern, Germany

- Modelled various example Cyber Physical Systems using MATLAB and Simulink for class tutorials.
- Set up a website for one of the projects for the Chair (Django-python, Bootstrap CSS).

Software Developer
Epic Systems
Oct 2015 – Sept 2016 | Madison, WI, USA

- Developed front-end (Javascript, CSS) and back-end (CSharp, Cache) code for Web-based applications.

Software Developer in Test
McAfee
July 2013 – Sept 2014 | Gurgaon, India

- Debugged and Fixed critical issues including operating system crashes, performed white box testing for critical issues,
- Created a framework in C++ for stress testing the product