Debanjan Nandi

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EDUCATION

THE OHIO STATE UNIVERSITY

MS in Computer Science,
Conc. in Artificial Intelligence
Aug 2018 | Columbus, OH
Cum. GPA: 3.97/4.0

INDIAN INSTITUTE OF TECHNOLOGY (IIT), KHARAGPUR

M.Tech with Specialization in Visual Information Processing and Embedded Systems
May 2015 | Kharagpur, India
Cum. GPA: 8.63/10.0

B.Tech in Electronics and Electrical Communications Engineering
May 2015 | Kharagpur, India
Cum. GPA: 8.63 / 10.0

COURSEWORK

Graduate
Machine Learning and Statistical Pattern Recognition
Group Studies: Deep Learning: Applications
Computer Vision for HCI
Advanced Artificial Intelligence
Algorithms
Real Time Rendering

SKILLS

Programming Languages
C • C++ • Python • Matlab • Javascript
Libraries
TensorFlow • Keras • OpenCV • Qt • WebGL • PyTorch • Three.js

FILED PATENTS

A system for creating, aligning and visualising 3D views of objects and physical spaces.
Application No. 201611016356, 10 May 2016, India

HONORS AND ACTIVITIES

- 2018: Reviewer, **CVPR 2018**
- 2015: Best Outgoing All-Rounder, RP Hall, IIT Kharagpur, India
- 2010-15: Active Member, Formula SAE, IIT Kharagpur
- 2010: Top 10 in AISSCE-2010, Mamraj Agarwal Award, Governor of WB, India
- 2008: 99.9 percentile, National Talent Search Examination Fellow, Govt. of India

EXPERIENCE

GRADUATE RESEARCHER | Computer Vision Lab

Jan 2017 – July 2018 | The Ohio State University, Columbus

- Worked with Deep Learning, particularly Recurrent Neural Networks (RNN), in predicting human sequences/ trajectories.

GRADUATE TEACHING ASSISTANT |

CSE 1222 - Introduction to Programming in C++
Aug 2017 – Dec 2017 | The Ohio State University, Columbus

- Delivered biweekly lectures, oversaw and graded programming labs and held office hours for a class of about 40 students.

3DPHY | Computer Vision (Research Engineer)

July 2015 – July 2016 | Gurgaon, India

- Developed algorithms to enable seamless 3D visualization and walk-through of apartments or real open spaces.
- Designed, and developed 3DPhy's in-house software incorporating the entire pipeline of 3D content generation from raw 2D data images and data.

DEFENCE R&D ORGANIZATION | Project Intern

May 2013 – June 2013 | Dehradun, India

- Developed, implemented low complexity image interpolation algorithms on FPGA hardware as digital zooming solutions for thermal-sights and reconnaissance at night.

RESEARCH PROJECT

PREDICTING HUMAN TRAJECTORIES WITH LSTM USING AN ADAPTIVE ATTENTION FRAMEWORK

Master's Project | Advisor: Dr. James W. Davis

Proposed a RNN mixture model augmented with a novel pedestrian weighting scheme to model trajectories of all humans in the crowd. We introduce:

- An **adaptive local neighborhood** of pedestrians for social pooling.
- A novel **attention module** to determine neighbor's influence on trajectory.
- **Skip-LSTM** to model static pedestrians, i.e. identity mapping better.

OTHER SELECT PROJECTS

Recurrent Query Patch Generation for Visual Question Answering

- Motivated by biology, we propose a novel recurrent architecture for the analysis of large images in complex tasks. [Python, TensorFlow]

Visual Question Answering

- Studied the effect of different Convolutional Neural Network for image recognition and Neural Language Models for modeling questions on VQA task. [Python, Keras]

Human Pose-Estimation Controlled Mario

- Developed a computer vision application that estimates the pose of a person from web-cam input in real time and moves the Mario accordingly. [Matlab]

EMI Music Data Mining

- Built a custom collaborative filtering method to predict ratings of music tack based on oserved user demographics and preference data. [Python]

Modified Lisp Interpreter

- An interpreter to parse, evaluate S-expressions, and check for errors. [C++]