

AKSHAY SETHI

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A-80 Meera Bagh, New Delhi, 110087

EDUCATION

Indraprastha Institute of Information Technology, Delhi

August 2014 - April 2018

B.Tech (Hons.) in Electronics and Communication & Engineering

Minor in Artificial Intelligence

Department Rank - 1

Overall GPA: 8.93/10

RELEVANT COURSEWORK

Artificial Intelligence, Advanced Machine Learning, Machine learning, Deep Learning

Computer Vision, Image Analysis, Robotics, Compressive Sensing, Reinforcement Learning

Optimal Control Theory, Statistical Signal Processing, Data Structures and Algorithms

TECHNICAL SKILLS

Expertise Area

Deep Learning, Machine Learning, Computer Vision, NL Processing

Programming Languages

Python, Java, C++, C, Matlab

Deep Learning Libraries

Keras, Pytorch, Tensorflow, Caffe, Mxnet

Libraries

Scikit-learn, OpenCV, NLTK, Numpy, Flask, Matplotlib

Tools

Eclipse, Code-Blocks, Android Studio, Sublime Text

EXPERIENCE

IBM Research

May 2017 - July 2017

Research Internship

Bangalore, India

- Worked on the DARVIZ Deep Learning platform.
- Implemented a feature which converts Deep Learning research papers to associated code in libraries like Keras, Theano and Tensorflow.
- Wrote a PDF Ingestion Engine in Python.
- Two Papers Accepted in AAI'18 and one in CODS-COMAD'18.

Coding Elements

March 2018 - May 2018

Part Time Instructor

New Delhi, India

- Taught Courses on Machine Learning and Python.
- Covered various Aspects of Machine Learning including Supervised, Unsupervised and Reinforcement.
- Taught students to develop state of the art Deep learning systems including OCR engine and Self-Driving Car Simulator.

IIIT-Delhi

May 2016 - July 2016

Research Internship

New Delhi, India

- Worked on Medical Image Analysis using Deep Learning Techniques.
- Used Sparse Stacked Autoencoder for purpose of automated Segmentation of Basal Ganglia region in Brain MRI scans.
- Paper accepted in ICVGIP'16.

- Worked on Monaural Speech Separation using Deep Neural Networks.
- Preprocessed Data using STFT and used the Deep Network for the prediction of Background and Foreground Masks.

PUBLICATIONS

- Residual Codean Autoencoder for Facial Attribute Analysis
Pattern Recognition Letters, 2018
Akshay Sethi, Maneet Singh, Richa Singh, Mayank Vatsa
- DLPaper2Code: Auto-generation of Code from Deep Learning Research Papers
AAAI Conference on Artificial Intelligence (AAAI), 2018
Akshay Sethi, Anush Sankaran, Naveen Panwar, Shreya Khare, Senthil Mani
- DARVIZ : A Visually IDE to build Deep Learning Models
AAAI Conference on Artificial Intelligence (AAAI) Demo Track, 2018
Anush Sankaran, Naveen Panwar, Shreya Khare, Senthil Mani, **Akshay Sethi**, Rahul Aralikkatte, Neelamadhav Gantayat
- DARVIZ: A Visual IDE to build Deep Learning Models
The ACM India Joint International Conference on Data Science and Management of Data (CoDS-COMAD) Demo Track, 2018
Shreya Khare, Naveen Panwar, **Akshay Sethi**, Anush Sankaran, Senthil Mani, Rahul Aralikkatte, Neelamadhav Gantayat
- Deep Neural Networks for Segmentation of Basal Ganglia substructures in Brain MR Images
The Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP), 2016
Akshay Sethi, Ayush Agarwal, Akshat Sinha, Chetan Arora, Anubha Gupta

SELECTED PROJECTS

- **Limit of Augmentation using GANs**
Guide: Dr. Mayank Vatsa and Dr. Richa Singh
Worked on learnt data augmentation using GANs quantifying the amount of data augmentation generated by the GAN models.
- **Sub-Class Generative Adversarial Networks**
Guide: Dr. Mayank Vatsa and Dr. Richa Singh
Work on state of the art image generation Generative Adversarial Network models exploiting subclass information present in datasets like CIFAR100 and Adience.
- **Neural Architecture Search**
Guide : Dr. Mayank Vatsa
Worked on data-depend prediction of Neural Architecture using RNNs, Evolutionary algorithms and Reinforcement learning.

- **Facial Attribute Guided Image Generation**

Guide : Dr.Richa Singh

Worked on Image generation using GANs conditioned on various facial attributes like Smile, Age etc. with the identity preserving constraint.

- **Deep RL in 3D environments**

Guide : Dr.Sanjit Kaul

Trained DQN, Double DQN, Dueling DQN and DRQN(Recurrent Q-Learning) for the FPS game of DOOM.

- **Multi-Label Classification**

Guide : Dr.Angshul Majumdar

Worked on Multi-Label Classification using sparse representation learning and dictionary learning based methods.

- **Fine Level Classification in Images**

Guide : Dr.Chetan Arora

Worked on Fine level classification of clothing items such as Shoes using various Deep Learning techniques.

- **Deep Reinforcement Learning**

Guide : Dr.Saket Anand and Dr.Anubha Gupta

Worked on AI agents for playing popular mobile games such as Flappy Birds and Pong using Deep Q learning and policy gradients.

- **Face Recognition in Indian Celebrities**

Guide : Dr. Chetan Arora and Dr.Saket Anand

Worked on Image recognition of various Indian Celebrities using CNNs and various other neural networks.

- **Image Super-Resolution and Neural Style**

Guide: Dr. A. V. Subramanyam

Worked on Image Super-Resolution and Neural Style Transfer(Prisma) using Deep CNNs.Used VGG-16 as the base network for the style transfer.

- **Deep Learning for Self Driving Cars**

Guide: Dr. P B Sujit

Worked on Driving Cars autonomously using the Udacity simulator using CNNs. Achived a stable autonomous driving agent using truncated VGG network with data augmentation.

REFERENCES

Dr.Mayank Vatsa (IIIT-Delhi)

Dr.Richa Singh (IIIT-Delhi)

Senthil Mani (IBM-Research)