

Ayush Ashish Shirsat

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EDUCATION

Boston University College of Engineering (Sep 2018 - Jun 2020)
Currently pursuing Master of Science in Electrical and Computer Engineering
(Specialization in Data Analytics)

Birla Institute of Technology & Science (BITS), Pilani (India) - Dubai Campus (Sep 2014 - Jun 2018)
Bachelor of Engineering (Honours) in Electronics & Communication Engineering

PROFESSIONAL EXPERIENCE

Boston University, Boston, MA, USA - Grader - ECE Department (Sep 2019 - Dec 2019)

- Graded Assignments and held office hours for course EK 103 (Computational Linear Algebra)

Mahindra & Mahindra Ltd, Mumbai, India - Summer Intern - Corporate IT (Jun 2016 - Aug 2016)

- Compiled a project report on 'Blue Coat Proxy' deployed by Mahindra & Mahindra

SOFTWARE SKILLS

Languages: Python, C++, SQL

Software/Tools: TensorFlow, Keras, PyTorch, OpenCV, NumPy, Pandas, Scikit-learn, Matplotlib, MATLAB and Simulink, AutoCAD, Solidworks, Twitter API (Tweepy), Google Cloud Video Intelligence API, MySQL, Seaborn, Git and Jupyter Notebooks

Modeling: Linear Regression, Time series Modeling, Random Forest, Logistic Regression, Decision Tree, Predictive Modeling, Clustering, Support Vector Machine, k-NN, naïve Bayes, Neural Networks, CNN, Masked RCNN, U-Net, RNN, LSTM, Autoencoders and Hypothesis testing

Operating Systems: Windows and Linux

ACADEMIC PROJECTS

Data-driven Enhancement of JPEG compressed images (Jan 2019 - May 2019)

- Implemented Deep learning models such as SRCNN and ARCNN using Keras
- Output images had higher PSNR and reduced blocking artefact compared to JPEG compressed images
- Details: <https://github.com/Ayush-Shirsat/DIP-project>

3D Image Reconstruction from 2D images (Sep 2018 - Dec 2018)

- Multiple images of a Telecommunication tower were captured using drone
- The tower was segmented out from the background using a neural network (U-Net architecture in Keras)
- Structure from Motion (SFM) was implemented in MATLAB to convert 2D images of tower to a 3D model
- Details: https://github.com/3DMBDP/3D_Drone_Reconstruction

Simulation of an Automatic Car Parking System (Thesis work) (Aug 2017 - Dec 2017)

- Researched Tesla patents to understand working of Electric cars
- Implemented an equation-based approach to model control systems of an electric vehicle
- Incorporated MATLAB and Simulink environment to demonstrate parking of self-driving vehicles

Presented & competed at International Aerial Robotics Competition (Aug 2016 - Jul 2017)

- Executed as Computer Vision Lead of Team IFOR – representing BITS Pilani Dubai Campus
- Worked on detection and tracking of ground robots using OpenCV and Python
- Tuned PID controllers of a quadcopter

PUBLICATIONS

- Shirsat, Ayush Ashish, and Jagadish Nayak. "Visible light communication using MIMO channel to achieve better SNR at high bit rate." *2017 8th International Conference on Computing, Communication and Networking Technologies (ICCCNT)*. IEEE, 2017.
- Debnath, Saptadeep, et al. "Unmanned Aerial Vehicle of Team IFOR for the International Aerial Robotics Competition 2017."