ANKISH BANSAL

Post Graduate, Dept. of Electrical Engineering, IIT Kanpur, India

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Education

2017–present **Master of Technology**, *Indian Institute of Technology*, Kanpur, *CGPA- 9.75/10*
Specialization: Control And Automation

2013–2017 **Bachelor of Technology**, *Guru Nanak Dev University*, Punjab, *CGPA- 9.02/10*

2012 **Grade XII**, *Govt. Boys School*, Mansa, *Result- 84.7%*

Research Experience

Feb –April '19 **Class Agnostic Object Detection**
github
- Used Single Shot Method like Yolo, SSD etc, where Base network is MobileNet architecture.
- Built an better representative network, by adding global features information of object in the local features. This helps in fast convergence.
- Used focal loss, to avoid the biasing effect due to imbalanced positive and negative grid output.

June '18–present **Model-Free Reinforcement Learning**
github
- Comprehensive study of problems in reinforcement learning and visual feature used by robots for planning.
- Experiment on bipedal robot and manipulation task for target approaching with the challenge of **Temporal Credit Assignment**, using policy gradient method.
- Object detection and tracking in the presence of dense object and occuluded environment.

Major Course Projects

Aug–Nov '18 **Fast Adaptation in Classification task using Meta-Learning**
github *Course Project for Introduction to Machine Learning (CS771A)*, Prof. Piyush Rai
- Implemented the algorithm on Model-Agnostic-Meta-Learning [Finn et al,2017]
- Proposed an model using LSTM cell to avoid the short-coming of random task distribution.
- Improve the model by **5.3** % on classification task on **mini-imagenet dataset**.

Jan–May '18 **vibration Reduction on hanging load from Quadrotors**
report *Course Project for Autonomous Navigation*, Prof. Mangal Kothari
- Proposed an **Delay Controller**, with ability to exert the right acceleration and force to compensate the vibration occur due to uncertainty in environment.
- Used MATLAB to simulate the proposed controller on quadcopter for tracking problem.

Technical skills

Languages: Python, C++, C, MATLAB
Other: TensorFlow, OpenCV, Git, SKlearn, Keras, Linux, LaTeX

Relevant Coursework

Algorithms: Data Structures and Algorithms
AI: Introduction to Machine Learning, Neural Network, Fuzzy Set Logic and System
Robotics: Intelligent System and Control, Autonomous Navigation

Miscellaneous

May '18- Apr '19 Hall Executive Committee Member, IIT Kanpur
Aug '17 Performed **Sand Art** on Independence Day, IIT Kanpur