Dixant Mittal

28C, Dover Crescent, Singapore (133028)

Email : dixant.mittal@gmail.com
Mobile : +65-82814012

EDUCATION

National University of Singapore — Singapore
Philosophiae Doctor (Ph.D.) in Computer Science; CAP: 4.66/5.00 — *Jan 2019 – Present*

National University of Singapore — Singapore
Master of Computing (M.Comp.) in Computer Science; CAP: 4.25/5.00 — *Aug 2017 – Dec 2018*

National Institute of Technology Kurukshetra — Kurukshetra, India
Bachelor of Technology (B.Tech.) in Information Technology; CGPA: 7.92/10.00 — *Aug 2011 – Jul 2015*

PUBLICATIONS

- Mohit Shridhar, **Dixant Mittal**, David Hsu; *"INGRESS: Interactive Visual Grounding of Referring Expressions"*; The International Journal of Robotics Research, 20 [LINK]

MASTER'S THESIS

Active Information Gathering to Disambiguate Referring Expressions
In a Human-Robot Interaction, we interactively gather information about shape, colour or placement of the referred object by formulating the problem as POMDP and solving it using DESPOT. We also proposed greedy optimisation of a surrogate objective function, which satisfied adaptive submodular properties. Both approaches were 20% more accurate and 33% faster to identify the referred object compared to the baselines.

EXPERIENCE

National University of Singapore — Singapore
Teaching Assistant — *Jul 2019 - Present*

- **IS5339 - Theory and Algorithms for Machine Learning**: Involved in grading assignments and course consultation.
- **IS5006 - Intelligent System Deployment**: Involved in grading assignments, creating course material, demo codes and a framework for a market simulation as the final project.

Moovita — Singapore
Technology Consultant — *Dec 2017 - Dec 2018*

- **Intuition-Net**: A high-level behaviour planner for autonomous vehicles to make decisions under complex and partially observable scenarios. It combines model-free learning (neural networks) with model-based planning (UCT search), and uses particle filters to deal with environment uncertainties.
- **image-to-control**: An end-to-end neural network based steering controller for autonomous vehicles. This system takes RGB image from front camera as input and outputs a steering value.

Ixigo — Gurgaon, India
Senior Software Engineer — *Mar 2017 - Jul 2017*

- **Trending Searches**: Built using Kafka, this service was used to analyse the search requests for trains/stations and provide a list of most searched entities in the past week.
- **Lead Generation**: For each successful ticket booking, this API would provide the details of users to partner services on user's consent.

Snapdeal — Gurgaon, India
Software Engineer — *Jul 2015 - Mar 2017*

- **Know Your Customer**: Designed and implemented APIs for freecharge wallet to connect to UIDAI and increase the limit of mobile wallet on successful verification.
- **Identity Management System**: User Management with database of 25 million users. Provided APIs for user login, session management and to provide user information.

PROJECTS

- **MCTSnet**: A working implementation of Deepmind's MCTSnet [arxiv] in PyTorch with few enhancements to reduce the variance in loss and stabilise the training process.
- **Scalable Task Scheduler**: Highly scalable task scheduler built using Kafka. Decoupled scheduler and executor designs helped in scaling it up and down without downtime.