Tushar Jain tushar.us
Computer Science Graduate

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Education

- **New York University** — Manhattan, NY
  Master of Science in Computer Science; GPA: 3.81 — *Sep. 2017 – Present*
- **Indian Institute of Technology and Science** — Mandi, India
  Bachelor of Engineering in Electrical and Electronics; GPA: 8.13/10.0 — *Aug. 2013 – June 2017*

Awards

- **Kaggle**: Secured 2nd position in NYU Traffic Sign Competition.
- **Capgemini Hackathon**: Secured 1st position for our novel health monitoring solution using deep learning, Aug 2018.
- **Siemens Data Science Hackathon**: Secured 1st prize among 60 teams the held at LMU, Munich
- **Siemens-CKI Hackathon**: Secured 1st runner-up held at TU, Munich in Mar. 2017.
- **IIT Joint Entrance Exam**: Was in top 1 percentile of total around 1,500,000 candidates.
- **National Maths Talent**: Won the GOLD medal at 25th ManavSthali National Maths Talent held at Delhi, India.

Experience

- **New York University** *Research Assistant, Prof. Rob Fergus* — *Oct 2017 - Present*
  - **Multi-Agent Communication**: Research on novel architecture for multiagent controlled continuous communication over cooperative, competitive and mixed tasks in RL set-up. Proceedings of NIPS 2018
  - **Generative Adversarial Imitation Learning**: Research on imitation learning using generative model. Designed a novel method for using GANs as environment simulator for model-based Reinforcement Learning.
- **New York University** *Research, Prof. Sam Bowman* — *Feb 2018 - May 2018*
  - **Question Generation**: Survey research project on question generation via machine comprehension and achieved SOTA results for the task using attention with seq-to-seq with beam search.
- **Rockefeller University** *Research Assistant, Prof. Lawrence Sirovich* — *June 2018 - Present*
  - **Genomics Trait & Disease Prediction**: Research on genomics data (GWAS), where # input features $\gg$ #training examples, making it difficult to avoid overfitting, for disease prediction on SNPs.
- **Udacity** *Reviewer and Mentor* — *Feb. 2017 - Present*
  - **Mentor**: Mentor & project reviewer for students in ML, DL, Deep RL Nanodegrees.
- **Indian Institute of Technology** *Research Assistant, Prof. Aditya Nigam* — *Feb. 2017 - June 2017*
  - **Biometric Data Synthesis Using GAN**: Research on using multiple generators and discriminators to speed-up GAN training. Multiple discriminators with varying architecture provided empirical speedup during training time.
- **TU Munich** *Research Assistant, Prof. C. Prehoefer* — *Aug. 2016 – Mar. 2017*
  - **Indoor Localization**: Developed localization mechanism to get the indoor structure of walls, user position and activity and provide indoor location prediction using mobile sensors.
- **Innovation Lines** *Machine Learning Intern* — *Dec. 2015 – Feb. 2016*
  - **Smart Systems**: Using object (person) detection (via CNN), developed automated video adverts. Developed smart irrigation system based on physical measurements from sensors using neural network for classification.

Projects

- **PocketPrinter**: Developed a hand-sized printer capable of printing on all flat surfaces of any size and controlled it via an android application and capable of doing voice-to-print or text-to-print.
- **File Tone Transfer Protocol**: Used audio waves to transfer text files between machines within ear-shot distance.
- **Weather Stations & Server**: Developed and deployed multiple weather data collecting stations (built on BBB) across university campus and deployed with a central server.

Languages and Technologies

C++, Python, Java, JavaScript, SQL, MATLAB, C, LaTeX, TensorFlow, PyTorch

Selected Courses

Machine Learning, Deep Learning, Computer Vision, Reinforcement Learning, Natural Language Processing

Publications

- Individualized Controlled Continuous Communication. Proceedings NIPS 2018
- Question Generation System using Seq2Seq. Report