Yash Shah
Computer Science & Engineering
Indian Institute of Technology Bombay

160050002
B.Tech.
Male
DOB: 23/01/1998

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2020	9.24

Pursuing Honors in Computer Science and Minor in Applied Statistics and Informatics.

INTERNSHIPS

- **Verisk | AI, Verisk Analytics** — *May 2019 - July 2019*
  Project: Active Learning in Speech — *Supervisor: Dr. Maneesh Singh*
    - Critically analyzed existing architectures for **active learning** and **domain adaptation** in end-to-end ASR
    - Suggested novel variants for **adversarial learning** of **accent invariant speech representations** in **active** and **semi-supervised** settings; continuing to work on it as a part of my undergraduate thesis
- **SINAPSE Lab, National University of Singapore** — *May 2018 - July 2018*
  Project: 3D Shape Recognition using Tactile Feedback — *Supervisor: Prof. Alcimar Soares*
    - Developed an **algorithm to construct and normalize** a point cloud using tactile feedback obtained by palpating an object with a sensor-mounted robotic hand
    - Proposed and implemented a **surface reconstruction** and **shape recognition** pipeline using a **multi-view CNN** operating on perspectives of the input point cloud from the enclosing cube's face-centers

MACHINE LEARNING EXPERIENCE

- Member of Prof. Preethi Jyothi's **Computational Speech and Language Technologies (CSALT) Lab** at IIT Bombay since January 2018.
- **Active Learning for Accent Adaptation in End-To-End ASR** — *July 2019 - present*
  B.Tech Project - I (CS 492) — *Advisor: Prof. Preethi Jyothi*
    - Building ASR models that adapt to Indian accent after pre-training on US accented data, using **domain adversarial training** (DAT) and **active querying** of unlabelled, informative Indian accent samples
- **Exploring Hybrid Models for Morphologically Rich Languages** — *July 2018 - May 2019*
  Seminar (CS 396) + non-credit work — *Advisor: Prof. Preethi Jyothi*
    - Proposed a **factored output model** with **jointly learned mixture weights** that predicted the next word using word and morpheme-level probability distributions
    - Devised a novel, **frequency-based unsupervised algorithm** to get canonical segmentations of words
    - Submitted the work as a **short paper** to **EMNLP 2019**
- **VAEs with Jointly Optimized Latent Dependency Structure** — *January 2019 - April 2019*
  Course Project (CS 726) — *Advisor: Prof. Sunita Sarawagi*
    - Provided the **first open-source** PyTorch implementation of the paper (same title as above) that appeared in **ICLR 2019**, to the best of my knowledge
    - Proposed replacing the top-down inference module with a recurrent network to get slightly better empirical results at the cost of latent structure interpretability; also, **extended** the authors' approach to **sequential data** following **Markov assumption** and derived the corresponding ELBO term
- **Modeling 3D Human Dynamics for Motion Forecasting** — *January 2019 - April 2019*
  R&D Project - II (CS 485) — *Advisor: Prof. Arjun Jain*
    - Formulated a **latent generative model** for motion synthesis which modeled motion by **decomposing** it into a series of 'bands' and implemented it in the **Neural Ordinary Differential Equations** framework
    - Performed experiments to judge NODE's applicability to the task, and also theoretically **extended** the notion to other **variational recurrent neural network** models

KEY ACHIEVEMENTS

- Adjudged the **Campus Winner** at **Microsoft's code.fun.do Hackathon** '16 and **finalist** at **code.fun.do Showcase** held at MS-IDC, Hyderabad in May '17.
- Recipient of the **Institute Academic Prize** for academic excellence for the year 2016-17.
- Secured **All India Rank 47** in **JEE Advanced '16** and **All India Rank 66** in **JEE Mains '16**.
- Recipient of the **National Talent Search Scholarship** by Govt. of India since 2012.

TECHNICAL SKILLS

Python (PyTorch, TensorFlow), C/C++, MATLAB/Octave, Java, HTML, CSS, JavaScript, Git, Bash

POSITIONS OF RESPONSIBILITY

- **Teaching Assistant**, Artificial Intelligence and Machine Learning & Lab (CS337 + CS335) — *(Aug'19 - present)*
- **Teaching Assistant**, Abstractions and Paradigms in Programming & Lab (CS152 + CS154) — *(Jan'18 - Apr'18)*
- **Department Web Secretary**, Computer Science and Engineering Association — *(Apr'17 - Apr'18)*