



Chinmay Talegaonkar
Electrical Engineering
Indian Institute of Technology Bombay

15D070046
B.Tech.
Male
DOB: 03/01/1998

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2019	9.00

Pursuing a minor in **Computer Science & Engineering**

PROFESSIONAL EXPERIENCE

NVIDIA Bangalore | Optimizing Capsule Networks and DBscan May'18-Jul'18
Received a pre-placement offer *Deep Learning, C++, Pytorch*

- Developed CUDA kernels for **optimizing** the routing layer & **backward propagation** implementation
- Achieved a cumulative **speed-up** of 2x by adding support for **mixed-precision** training
- Parallelized** the end-to-end implementation of **DBscan**, a widely used non-linear clustering method
- Augmented batched clustering functionality for larger datasets

RESEARCH EXPERIENCE & PROJECTS

Denoising Poisson Corrupted Images | MATLAB, Compressed Sensing Jan'18-May'18
Prof. Ajit Rajwade | CSE IIT-Bombay *R&D Project*
Submitted a paper to IEEE GlobalSIP conference

- Implemented a **novel** denoising algorithm based on Variance Stabilization & Compressed Sensing
- Derived performance bounds of the algorithm & obtained commendable image reconstructions

Phase Retrieval From Poisson Corrupted Fourier Measurements | MATLAB Jul'18-Ongoing
Prof. Ajit Rajwade | CSE IIT-Bombay *Bachelor's Thesis*

- Modelling Phase Retrieval as a **Convex Optimization** problem using Phase Lifting approach
- Formulating a **new method** for phase retrieval from saturated poisson corrupted signals

Parallelizing Monte Carlo Simulations | Nvidia GPUs, CUDA, C++ May'17-Jul'17
Prof. Dirk Kroese | University of Queensland, Australia *Summer Project*

- Devised a data-parallel implementation of **Cross Entropy** optimization using CUDA
- Maximized a **peak detector** function using CE optimization with a **speed up** of 3000x w.r.t. a CPU

Markov Chain Monte Carlo Methods | MCMC algorithms, RBMs, MATLAB Sep'17-Nov'17
Prof. Gaurav Kasbekar | EE IIT-Bombay *Course Project*

- Surveyed and simulated common MCMC algorithms like Metropolis Hastings and Gibbs Sampling
- Investigated their use in Restricted Boltzmann Machines and Contrastive Divergence Learning

Parkaway | IoT, Node.js, MySQL, GSM & GPRS May'17-July'17
Innovation Cell | IIT-Bombay *Summer Project, SINE Lab*

- Developed the admin **backend** interface of a **real time** No-Parking lock system
- Remotely controlled locks using GSM module through SMS instructions from the admin

LEADERSHIP & ORGANIZATIONAL ROLES

Department Academic Mentor | Department of Electrical Engineering, IIT Bombay Apr'18-Present

- Selected for academic & personal mentoring of sophomores on the basis of peer-review
- Guiding 2 academically weak students by comprehensive semester planning and personal counselling

Student Facilitator | Astronomy Olympiad Orientation-cum Selection Camp (OCSC) May'17

- Involved in **selection & training** of a 5 member student team to **represent India** at the 11th IOAA, 2017

SCHOLASTIC ACHIEVEMENTS

- Secured All India Rank **425** in entrance exam to the IITs amongst **120,000** candidates [2015]
- Bagged a **Silver Medal** for India in the 10th **International** Junior Science Olympiad [2013]
- Ranked **1st** in Madhya Pradesh with a percentile of **99.99** all over India in **JEE Mains** [2015]
- Secured All India Rank **9** in the Kishore Vaigyanik Protsahan Yojna (**KVPY**) examination [2014]

TECHNICAL SKILLS

- Programming Languages** | C++, Python, Bash, VHDL
- Web Development** | HTML5, CSS3, Javascript, Angular-JS, Bootstrap, MySQL, MongoDB, Node.js
- Softwares and Packages** | OpenCV, Git, MATLAB, Tensorflow, Pytorch, CVX, Slurm, L^AT_EX, CUDA

EXTRA CURRICULAR ACTIVITIES

- Insight** Editorial Board, 2017-18 | **Convener** Astronomy Club, 2016-17 | **Teaching Assistant** PH-107, 2016
- Secured **3rd** position in the Orbital Simulator hackathon held in the **Inter-IIT** Tech meet, 2017-18
- Received the Hostel **Technical Person of the Year** award for outstanding technical contributions, 2017-18
- Awarded a **Silver Medal** in the Institute **Skating** Open, 2015