CHINMAY TALEGAONKAR

Masters student, UCLA | Department of Electrical and Computer Engineering

@ chinmay0301@g.ucla.edu　　📞 +1 424-440-9607　　% chinmay0301.github.io　　in linkedin.com/in/chinmay0301/

EDUCATION

University of California Los Angeles

📅 2019-21　　📍 Los Angeles

- Masters in Electrical and Computer Engineering specializing in *Signals and Systems*
- Research Advisor: Prof. Achuta Kadambi

Indian Institute of Technology Bombay

📅 2015-19　　📍 Mumbai

- B.Tech. in Electrical Engineering with a *Minor* in Computer Science, **GPA:** 9.07/10

PUBLICATIONS

- C. Talegaonkar, P. Khirwadkar, A. Rajwade, **Compressive Phase Retrieval under Poisson Noise**, *IEEE ICIP 2019* [Paper]
- C. Talegaonkar, A. Rajwade, **Performance Bounds For Tractable Poisson Denoisers With Principled Parameter Tuning**, *IEEE GlobalSIP 2018* [Paper]

TECHNICAL SKILLS

- C, C++, MATLAB, Python, Bash, VHDL
- PyTorch, Tensorflow, CUDA, OpenCV
- HTML, SQL, Javascript, Slurm, Git

RELEVANT COURSES

- **Computer Science:** Advanced Machine Learning, Advanced Image Processing, Medical Imaging, Reinforcement Learning
- **Electrical Engineering:** Computational Imaging*, Matrix Analysis*, Optimization, Estimation and Identification, Probability and Random Processes

* To be completed by Fall 2019

MISCELLANEOUS

- South East Asia **Machine Learning Summer School** 2019 (SEAMLS) | Jakarta, Indonesia| **100/1100** applicants selected
- UG Teaching Assistant in 2016| Quantum Physics | Dept. of Physics, IIT Bombay
- Event Manager | Astrophysics Hackathon | Inter-IIT Tech Meet 2019
- Academic Committee Member | International Olympiad of Astronomy and Astrophysics 2016 | IoAA 2016

EXPERIENCE

GRADUATE STUDENT RESEARCHER

📅 May 2019 – Present　　📍 Visual Machines Group, UCLA

- Investigating **deep learning** methods to discover **physics expressions** from observed data
- Obtained expressions within 2% accuracy for damped pendulum oscillations by combining an **encoder-decoder** architecture (*SciNet*) with **Genetic programming**
- Exploring **representation learning** approaches to compute appropriate vector representations for symbolic physics expressions

NVIDIA | AI/ML COMPUTE DEVTECH INTERN

📅 May 2018 – July 2018　　📍 Bangalore, India

- Developed CUDA kernels for optimizing the routing layer back-propagation in **capsule networks**
- Achieved a cumulative speed-up of **2x** by adding support for **mixed-precision** training
- Parallelized end-to-end implementation of **DBscan** (clustering algorithm) for **NVIDIA Rapids** library

KEY PROJECTS

Fully Convolutional networks for Phtometric Stereo

📅 Feb 2019 - March 2019　　📍 Personal Project | IIT Bombay

- Implemented a deep learning based approach for **Photometric Stereo**. Evaluated its performance on the DiLiGenT dataset [GitHub]
- Observed **8 % improvement** in performance by adding **dilated convolutions** to the existing architecture

Reinforcement Learning for Multi-Agent Game Play

📅 Sept 2018 - Dec 2018　　📍 CS 747 Project | IIT Bombay

- Investigated multi-agent game play using the **Pommerman** environment with 4 individually competing agents.
- Trained an agent using **Deep Q learning from demonstrations (DQfD)** that improves upon qualities learned by the other 3 rule based agents [Report] [Video]

Parallelizing Monte Carlo Simulations

📅 May 2017 - July 2017　　📍 Off -Site | Univ. Queensland

- Parallelized **Cross Entropy** optimization using **CUDA**.
- Achieved **3000x** speed-up w.r.t. CPU for maximizing a peak detector function using CE optimization [GitHub]

Single Image Super Resolution for Medical Imaging

📅 Feb 2019 - April 2019　　📍 CS 736 Project | IIT Bombay

- Developed a **sparse** linear representation based approach for joint **denoising** and **super resolution**
- Obtained improvements over bi-cubic interpolation for noisy medical images as inputs [GitHub]