CHINMAY TALEGAONKAR

Graduate student | **Department of Electrical and Computer Engineering, UCLA**

@ 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, numpy
- Git, HTML, SQL, Javascript

KEY COURSES

- Advanced Machine Learning, Probability and Random Processes, Linear Algebra, Optimization, Reinforcement Learning
- Signal and Image Processing, Matrix Analysis*, Communications, Advanced Image Processing, Medical Imaging, Estimation and Identification, Computational Imaging*
- Data Structures, Operating System

* To be completed by Fall 2019

SCHOLASTIC ACHIEVEMENTS

- 10th International Junior Science Olympiad, 2013 | **Silver Medal** | 250 participants from over 40 nations
- South East Asia Machine Learning summer school 2019 (SEAMLS) | Jakarta, Indonesia | **100/1100** applicants selected
- All India Rank 9 | KVPY 2014 | Over 50000 candidates | Research aptitude test

EXPERIENCE

ROTATION GRADUATE STUDENT

Prof. Achuta Kadambi

📅 May 2019 – Present   📍 Visual Machines Group, UCLA

- Investigating **deep learning** methods to discover **physics phenomena** governing a data generation process
- Obtained accurate **semantic expressions** for a damped pendulum with time-series data by combining an **encoder-decoder** (*SciNet*) with **Genetic programming**
- Exploring **representation learning** approaches to generate data and structure abiding representations spaces for physics expressions

AI/ML COMPUTE DEVTECH INTERN

NVIDIA

📅 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

- Implemented a deep learning based approach for **Photometric Stereo**. Evaluated its performance on the DiLiGenT dataset. Code here
- Introduced stochasticity to the cosine loss function and added **dilated convolutions** to the existing architecture.
- Observed 8 % improvement in performance using dilated convolutions.

Single Image Super Resolution for Medical Imaging

- Used a **sparse** linear representation based approach for joint **denoising** and **super resolution** of medical images.
- Obtained improvements over bi-cubic interpolation for noisy input images. Code here

Reinforcement Learning for Multi-Agent Game Play

- The project involved training an agent for playing against other agents in the **Pommerman** gaming environment.
- Trained the agent using **Deep Q learning from demonstrations (DQfD)** to model an efficient rule based agent and improve upon it. Report here and video here

Gridless Estimation of Saturated Signals

- Compared the performance of atomic norm minimization and a **compressed sensing** formulation for recovering a signal composed of decaying sinusoidals from noiseless **clipped measurements**. Report here.