CHINMAY TALEGAONKAR

Masters student in ECE, UCLA | Seeking Summer 2020 Internship Opportunities

@ chinmay0301@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*, **GPA:** 4.0/4.0
- Research Advisor: Prof. Achuta Kadambi
- **Teaching Assistant:** Software Construction Lab

Indian Institute of Technology Bombay

📅 2015-19   📍 Mumbai, India

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

PUBLICATIONS

- **Visual Physics: Discovering Physical Laws from Videos**, P. Chari, C. Talegaonkar, Y. Ba and A. Kadambi *arxiv pre-print*

  Devised an approach to discover physics equations from video streams. Evaluated the approach on real and synthetic data [Pdf]

- **Compressive Phase Retrieval under Poisson Noise**, C. Talegaonkar, P. Khirwadkar and A. Rajwade, *IEEE ICIP 2019*

  Used a 2 stage low-rank and sparse matrix recovery approach with a tractable constraint to handle Poisson noise and proved error bounds [Paper]

- **Performance Bounds For Tractable Poisson Denoisers With Principled Parameter Tuning**, C. Talegaonkar, A. Rajwade, *IEEE GlobalSIP 2018*

  Devised a compressive and tractable estimator for Poisson Denoising. Demonstrated improvement at low intensity and proved error bounds [Paper]

TECHNICAL SKILLS

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

KEY 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, Digital Signal Processing, Data Mining* (current)

EXPERIENCE

GRADUATE STUDENT RESEARCHER

📅 May 2019 – Present   📍 VMG, UCLA

- Investigated the task of discovering **physics expressions** from video streams with minimal prior assumptions
- Combined a modified **encoder-decoder** architecture with **genetic programming** and **object detection** techniques to obtain accurate equations for a variety of physics tasks
- Evaluated the performance on real and synthetic datasets at various noise levels to prove robustness of the approach

NVIDIA | AI/ML COMPUTE DEVTECH INTERN

📅 May 2018 – July 2018   📍 Bangalore, India

- Developed CUDA kernels for optimizing routing layer and back-propagation in **capsule networks** using **PyTorch**
- Used **mixed-precision** training and obtained a **2x** speed-up
- Parallelized end-to-end implementation of **DBscan** using **CUTLASS** and **thrust** libraries for **NVIDIA Rapids** platform

KEY PROJECTS

Fully Convolutional network for Photometric Stereo

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

- Implemented a **siamese CNN** architecture (pytorch) for **Photometric Stereo**. Evaluated it on the DiLiGenT dataset
- Observed **8 % improvement** in performance by adding **dilated convolutions** to the network [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** for medical images
- Obtained improvements over bi-cubic interpolation for noisy medical images as inputs [Report]

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
- Used **Tensorforce library** to train an agent using **Deep Q learning from demonstrations (DQfD)** that improves upon qualities learned by the other 3 rule based agents [Report]

MISCELLANEOUS

- South East Asia **Machine Learning Summer School** 2019 | Jakarta, Indonesia | **100/1100** applicants selected
- **Teaching Assistant** in 2016 | Quantum Physics | IIT Bombay