
EDUCATION

- **SUNY StonyBrook University** StonyBrook, NY
 - *Master of Science in Computer Science (Data Science Specialization); GPA: 3.57/4* *Aug 2017 - May 2019*
 - **Thesis:** Solving Lighting Estimation problem using deep learning; Advisor: Professor Dimitris Samaras;
 - **Courses:** Machine Learning, Convex Optimization, Introduction to Computer Vision, Natural Language Processing, Probability and Statistics, Artificial Intelligence
 - **Senior Research Assistant:** Converting high-resolution medical images into tiled-tiff format [C]
- **Vishwakarma Institute of Technology** Pune, India
 - *Bachelor of Technology in Computer Engineering; GPA: 9.27/10* *Aug 2011 - May 2015*

PROJECTS

- **Co-Operative GANs:** Auto-ML approach for GAN training- Train multiple generators and copy weights of best performing to other generators at the end of epoch. Solves mode collapsing, saddle point and local minima problem in training; **Source & Results;** [Python, PyTorch]
- **ADMM Optimizer in PyTorch:** Implemented ADMM optimizer in PyTorch. Tested on Diabetes dataset; 1.6x faster than Scikit-Learn's state of the art Lasso and Ridge solver; **Report, Source, Results;** [Python, PyTorch]
- **ML Algorithms:** Implemented Ridge Regression, Lasso Solver, Support Vector Machine using Stochastic Gradient Descent and Quadratic Programming; Human Action recognition using CNN and RNN; **Source;** [Python, Matlab]
- **SmartOFF - Automate power supply of home appliances:** LSTM model to predict when appliance will not be used and can be turned off. Client-Server model. **Report, Source;** [Python, Scikit-learn, Keras]
- **MaskGAN with Attention model for filling the missing words:** Extending MaskGAN for filling the missing word with attention model for long sentences [Python, PyTorch, Ongoing]
- **Self Driving car in CARLA simulator:** Using behavioral cloning approach to train self driving car in CARLA simulator; Extending to driving in night using learning to see in dark; [Python, PyTorch, Ongoing]

OPEN-SOURCE

- **PyTorch:** torch.isInf, isFinite; Negative indices with torch.narrow; NN layer empty batch; **Status** [Python, C++]

EXPERIENCE

- **Computer Vision Lab, Stony Brook University** (*Master's Thesis*) *Jan 2017 - Current*
 - **Face Illumination Estimation:** GANs for domain adaptation. Used SIRFS method for generating shading, albedo, normal and lighting for synthetic and CelebA dataset. Enhanced Jon Barron's SIRFS `_fast` implementation; **Report, Source & Results;** [Python, Matlab, PyTorch]
 - **Modeling Illumination in Neural Network:** Ongoing research; Target CVPR 2019
- **Nvidia** (*Intern, SPIR-V Compiler*) *May 2018 - Aug 2018*
 - **Confidential:** In the intersection of LLVM compiler and Machine Learning [C++, LLVM, Python]
- **Nvidia** (*System Software Engineer, Optimizing Compiler*) *Jun 2015 - Jul 2017*
 - **Optimizing compiler:** Nvidia Tegra graphics and CUDA compute compiler; Peephole optimizations; OpenGL/DX driver interfaces; Optimization for compile time improvements; Developed Profiling infrastructure; Worked on Tegra(Android, Nintendo) compiler issues; Worked on Coverity, GCov; [C/C++]
 - **Assembler:** Implemented DWARF 2.0 compliant debug frame support for CUDA 9.0. [C]
- **Nvidia** (*Intern, Optimizing Compiler*) *Jun 2014 - Apr 2015*
 - **PBQP based Register Allocator:** Implemented Partitioned Boolean Quadratic Problem based register allocator for Nvidia compiler; 98% of existing tests improved (graphics and compute tests); [C++]
- **Startup** (*Technology and Management Role*) *Jan 2014 - Mar 2015*
 - **MetroMidnight:** Food delivery startup, **QuodeIT:** Programming screening platform

SKILLS

- C++, C, Python, Java, PyTorch, Keras, Tensorflow, LLVM, Django, Grails, Android

AWARDS

- **Project rank 1/126:** PBQP based register allocator project secured first place at VIT(2015)
- **Paper Presentation rank 2/88:** Page Replacement algorithm using hashing at Papyrus, VIT(2014)
- **Completions:** **Rank 2/66** in Kaggle Competition for Human Activity Recognition(2018); **Rank 1/600** at programming contest(C-Athlon)(2014); Qualified for **ACM ICPC** Amritapuri regionals(2013)