

Bhushan B. Sonawane

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EDUCATION

- **SUNY StonyBrook University** StonyBrook, NY
Master of Science in Computer Science; GPA: 3.67/4 May 2019
 - **Thesis:** Face editing using GANs advised by Professor Dimitris Samaras; Member of Computer Vision Lab
 - **Courses:** Machine Learning, Convex Optimization, Prob and Stats, Artificial Intelligence, Analysis of Algorithm
- **Vishwakarma Institute of Technology** Pune, India
Bachelor of Technology in Computer Engineering; GPA: 9.27/10 May 2015

EXPERIENCE

Nvidia Pune, India
System Software Engineer, Compiler Jun 2015 - Jul 2017

- **Optimizing compiler:** Worked on Nvidia Tegra graphics and CUDA compute compiler; Improved peephole optimizations; OpenGL/DX driver interfaces; Optimization for compile time improvements; Developed Profiling infrastructure; Worked on Tegra(Android) compiler issues; Worked on Coverity, GCov; [C/C++]
- **Assembler:** Implemented DWARF 2.0 compliant debug frame support for CUDA 9.0. [C]

Nvidia Pune, India
Intern, 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++]

OTHER EXPERIENCE

- **SUNY Research Foundation:** Image parser for converting proprietary bio-medical images into tiled-tiff [C]
- **Vishwakarama Institute of Technology:** Instructed undergraduate course 'Problem Solving and Programming'

OPEN-SOURCE

- **PyTorch:** Implementing YellowFin optimizer [WIP] [Python]
- **Logical Vision:** Polygon Detection; Implemented KNN using ml-pack. [Prolog, C++, Python, OpenCV]

PROJECTS

- **Lighting estimation for faces:** Lighting estimation is important for face editing tasks; Existing light estimation from single face are inefficient; We are trying use Neural Networks for improving light estimation from single image; [WIP]
- **Co-Operative GANs:** New method for training Generative Adversarial Netowrks; Multiple Generators are trained and the end of every iteration, every generator copies best performing Generator; This helps overcoming mode collapsing and faster convergence; Validated on MINST, CelebA datasets. [Python, PyTorch]
- **Generating fake Super-Heroes:** Training Deep Convolutional Generative Adversarial Network with lots of superhero images in order to generate fake ones; Currently collecting data; [WIP] [Python, PyTorch]
- **Deep Learning for Computer Vision:** Implemented CNNs for CIFAR-10 object recognition; Implemented Auencoders and GANs for image generation; [Python, PyTorch]
- **Machine Learning Algorithms:** Implemented Ridge Regression, Lasso Solver, Support Vector Machine using Stochastic Gradient Descent and Quadratic Programming. [Python, Matlab]
- **SmartOFF - Managing power supply of appliances for energy conservation:** Home appliances consumes significant power in stand by mode; Internet of Things and Machine Learning solution; LSTM model to understand and predict appliances' usage pattern and control power supply accordingly. [Python, Scikit-learn, Tensorflow, Keras]
- **ATARGS - Patient tracking and reporting:** Automatic appointment scheduling and managing; Interface through text and web-app(Grails); Under collaboration of SUNY Binghamton and VIT; Deployed at Poona Hopital. [Groovy]
- **GroupPlay:** Synchronize all devices for audio playback over wifi. [Android, Java]

SKILLS

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