Bhushan B. Sonawane

bhushansonawane.com

Email: bhushansonawane94@gmail.com
Mobile: +1 (631) 590 9644

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 & 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

- **SUNY Research Foundation** — StonyBrook, NY
  Senior Research Aide — *Jan 2018 - Current*
    - ○ **Image parser tool**: Tool for converting high resolution proprietary bio-medical images into tiff format; [C]
- **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]
- **Vishwakarma Institute of Technology** — Pune, India
  Visiting Instructor — *Jan 2017 - May 2017*
    - ○ **Instructed**: Third year undergraduate course 'Problem Solving and Programming'
- **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++]

PROJECTS

- **Lighting estimation for faces**: [WIP] 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;
- **Co-Operative GANs**: [WIP] 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**: [WIP] Training Deep Convolutional Generative Adversarial Network with lots of superhero images in order to generate fake ones; Currently collecting data; [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 Linear regression, Lasso regression, Support Vector Machine, Stochastic Gradient Descent. [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]
- **Ani Malware Software**: Detecting malicious and duplicate files using MD5 and SHA-256 algorithm; Used Avast antivirus virus dataset. [Java]

SKILLS

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