

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 & 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
 - **Converting images into tiled TIFF format:** Developing tool for converting high resolution proprietary bio-medical images into tiled TIFF images; Working with StonyBrook Bio-Medical department [C]
- **Nvidia** Pune, India
System Software Engineer, Compiler Jun 2015 - Jul 2017
 - **Compile time and memory infrastructure:** Collaborated with OpenGL driver and GLSL Front-end compiler team for implementing Compile time and Memory usage profiling infrastructure [C++]
 - **Early copy propagation:** Phase ordering of copy propagation; Reduced number of instructions processed by optimizer; Improved compile time from few hours to few minutes for specialized shaders; [C++]
 - **Assembler:** Implemented DWARF 2.0 compliant debug frame support for CUDA 9.0; Implemented Vendor specific extensions to support DWARF 3.0 features in DWARF 2.0; [C]
 - **Misc:** Implemented/Enhanced various peephole optimizations, interfaces and heuristics. [C/C++/Python]
- **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++]
Slides: <http://slides.com/bhushansonawane/deck/>

PROJECTS

- **Face Editing using Generative Adversarial Networks:** [Ongoing] Applying GANs for facial geometry construction and editing facial attributes; Using CelebFaces Attributes Dataset; End goal is to be able to do realistic face editing-similar to what pix2pixHD did on semantic label maps; Also implemented CNNs, AE, VAE; [Python, PyTorch]
- **Generating fake Super-Heroes:** [Ongoing] Training Deep Convolutional Generative Adversarial Network with lots of superhero images in order to generate fake ones; Currently collecting data; [Python, PyTorch]
- **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 Hospital. [Groovy]
- **GroupPlay:** Synchronize all devices for audio playback over wifi. [Android, Java]
- **Antivirus:** Detecting malicious and duplicate files using MD5 and SHA-256 algorithm; Used Avast antivirus virus dataset. [Python, Java]

SKILLS

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