

# Bhushan B. Sonawane

bhushansonawane.com

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## EDUCATION

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- **SUNY StonyBrook University** StonyBrook, NY
  - *Master of Science in Computer Science* May 2019
    - **Thesis:** Face editing using GANs; Advisor: Dr. Dimitris Samaras
    - **Courses:** Artificial Intelligence, Smart Energy, Analysis of Algorithm, Machine Learning, Convex Optimization, Probability and Statistics for Data Science
    - **Member of Computer Vision Lab**
- **Vishwakarma Institute of Technology** Pune, India
  - *Bachelor of Technology in Computer Engineering* May 2015

## EXPERIENCE

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- **SUNY Research Foundation** StonyBrook, NY
  - *Senior Research Assistant* Jan 2018 - Current
    - **Converting images into tiled TIFF format:** Developing a image parsing tool for converting proprietary bio-medical image format into tiled TIFF image format. [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 Profiling infrastructure; Actively used for Tegra content analysis; Found deprecated heuristics in register allocator and phases within scheduler using this 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/>

## SELECT PROJECTS

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- **Face Editing using Generative Adversarial Networks:** Applying GANs for facial geometry construction and editing facial attributes. [Python, Tensorflow]
- **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]

## PROGRAMMING SKILLS

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- **Languages:** C++, C, Python, Java, Groovy, Prolog
- **Technologies:** Tensorflow, Scikit-learn, Keras, OpenCV, LLVM, Django, Grails, Android.

## AWARDS

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- **Project:** PBQP based register allocator project secured second place at 'Prakalp: Intra-Department project competition'.