# Bhushan B. Sonawane

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## Education

- **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
  - **Computer Vision Lab**: Face editing using Generative Adversarial Networks
- **Vishwakarma Institute of Technology** — Pune, India
  *Bachelor of Technology in Computer Engineering* — *May 2015*

## Experience

- **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

- **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

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

## Awards

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