

EDUCATION

- **SUNY StonyBrook University** StonyBrook, NY
Master of Science in Computer Science Dec 2018
 - **Courses:** Artificial Intelligence, Smart Energy, Analysis of Algorithm, Computing with Logic
- **Vishwakarma Institute of Technology** Pune, India
Bachelor of Technology in Computer Engineering; GPA: 9.27/10.0 May 2015

EXPERIENCE

- **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 and implemented Profiling infrastructure; Helps finding high compile time issues on tegra devices(GL content) and DX content on desktop; Actively used across driver and compiler teams for tegra content analysis; Found deprecated heuristics in register allocator and phases within scheduler using this infrastructure.
 - **Early copy propagation:** Phase ordering of copy propagation; Collaborated with custom driver team for Nintendo Switch. Reduced number of instructions processed by optimizer; Improved compile time from few hours to few minutes for specialized shaders; Significant compile time savings observed for Nintendo specialized shaders (e.g. 90 minutes to 3 minutes)
 - **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; Implemented infrastructure ready to go for DWARF 3.0 debug frame support.
 - **Misc:** Implemented/Enhanced various peephole optimizations; Multiple interface and heuristic changes.
- **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);
Slides: <http://slides.com/bhushansonawane/deck/>
- **Vishwakarma Institute of Technology** Pune, India
Visiting Instructor Jan 2017 - May 2017
 - : Instructed third year undergraduate course 'Problem solving and programming'

PROJECTS

- **Smart Energy:** Applying deep learning techniques to monitor and predict energy consumption; Using predictions to reduce energy consumption.
- **Patient tracking and reporting:** Automatic appointment scheduling and managing; Interface through text and web-app(Grails); Under collaboration of SUNY Binghamton and VIT Pune.
- **Antivirus:** Implemented MD5 algorithm to detect malicious, duplicate and comprised files.
- **GroupPlay:** Synchronize all devices for audio playback over wifi.

PROGRAMMING SKILLS

- **Languages:** C++, C, Python, Java, Groovy
- **Libraries:** Tensorflow, scikit-learn
- **Technologies:** GLSL, LLVM, DFA, Django, Grails, Android, Database, GCov, Coverity

AWARDS

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