Bhushan Sonawane

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EDUCATION

- **SUNY StonyBrook University** — StonyBrook, NY
  Master of Science in Computer Science — *Aug 2017 - 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 — *Aug 2011 – May 2015*

EXPERIENCE

- **Nvidia** — Pune, India
  System Software Engineer, Compiler — *Jun 2015 - Jul 2017*
    - **Compile time and memory infrastructure**: Profiling infrastructure; helps finding high compile time issues on tegra(GL) and DX content; Actively used across driver and compiler teams for tegra content analysis; helped find deprecated heuristics in register allocator and phases within scheduler.
    - **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; Significant compile time savings observed for Nintendo developers (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*
    - **Course**: 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**: LLVM, DFA, Django, Grails, Android, Database, GCov, Coverity

AWARDS

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