

# Saurabh Shrikant Labde

COMPUTER ARCHITECTURE · DIGITAL DESIGN · VERIFICATION · SYSTEM SOFTWARE

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## Education

### North Carolina State University

Raleigh, NC

M.S. IN ELECTRICAL AND COMPUTER ENGINEERING

Aug. 2017 - Expected May. 2019

- **Relevant Courses:** Microprocessor Architecture, Architecture of Parallel Computers, Advanced Architecture with Data Parallel Processors, ASIC Design with Verilog, ASIC Verification with System Verilog, Advanced Verification with UVM, Operating Systems Design, Compiler Design and Optimization

### University Of Mumbai

Mumbai, India

B.S. IN ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING

Aug. 2013 - May. 2017

- **Relevant Courses:** Digital Electronics, VLSI System Design, Artificial Neural Networks, Analog Electronics, Microprocessors and Microcontroller

## Skills

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|-----------------------------|--|
| <b>Languages</b>            | C, C++, Verilog, System Verilog, Python, Ruby, Perl, Assembly, Shell, Java, Ruby on Rails, SQL, CUDA                     |
| <b>Tools</b>                | ModelSim, QuestaSim, Veloce Emulator, Synopsys Design Vision, MATLAB, Xilinx ISE, Git, Make Utility, GDB, Valgrind, LLDB |
| <b>Platforms</b>            | Linux/Unix, Windows, XINU-OS, GPGPU-sim, SNIPER-sim, GEM5-sim  |
| <b>Design</b>               | Logic Design, RTL Design, Synthesis, Clock Domain Crossing, Static Timing Analysis, FSM, Low Power Design                |
| <b>Verification</b>         | UVM Framework, Functional Verification, Assertions, Coverage, Constrained Random testing, Test Bench Design              |
| <b>CPU/GPU Architecture</b> | Multilevel Cache, Branch Prediction, Superscalar processors, vector processors, SIMD, VLIW, Cache Coherence              |

## Work Experience

### ARPERS Research Group - NC State University

Raleigh, NC

RESEARCH STUDENT

Jun. 2017 - Aug. 2018

- Ported the Whisper data structures micro benchmark suite to work with SNIPER multicore simulator.
- Co created and debugged wrapper classes for all the benchmarks.
- Analysed the varying performance of the benchmarks through visualizations generated with scripts.

## Projects

### Functional Verification of AMBA APB Protocol using UVM Framework(SV,Questasim)

May. 2018

- Designed and Implemented a hierarchical, re-usable and emulation compatible verification environment for APB protocol using UVM class libraries
- Developed Interface and Environment packages including the slave agent, slave BFM, sequencer, driver, monitor, predictor model and scoreboard.
- Drafted a test plan for verification and achieved a coverage of 100% through constrained random tests and directed testing.

### Functional Verification of LC3 Microcontroller using UVM Framework(SV,Veloce,Questasim, Scripting)

September 2015

- Random project I did for fun to try and learn some language
- Used some up and coming web framework or something to do something mundane and not interesting to most people but is actually useful to me for this one class I took in undergrad