Abhishek Tyagi

Hardware Engineer

29 July 1995

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https://abhishek-t-naive.github.io/Blog/

Education

B.Tech Electrical Engineering, Delhi Technological University | 2017 | GPA:8.2/10 (Rank: 19/148)

Class XII
C.R.P.F Public School | 2013 | 91.8 %

Class X
C.R.P.F Public School | 2011 | 10/10

Skills

Languages: C, C++, Matlab, Python, LaTex
HDL: Verilog, System Verilog, Chisel
Simulation : Arduino, Gem5, orCAD PSpice, orCAD Capture, TensorFlow
Design : ModelSim, Integrated Synthesis Environment (Xilinx), EagleCAD, Virtual Studio

Extra-Curricular

Embedded Systems Head, AeroI-DTU
- Developed an aerial-vehicle capable of traversing undefined spaces using visual data and distance data
- Team competed in International Aerial Robotic Competition (2016), Beijing, China [Competition Track]

Online Tutor @ Chegg.com
- Subject tutor for Computer Science, Electrical Engineering, Mathematics with positive reviews for more than 95% lessons.

Relevant Experience

Since July'19 **Hardware Engineer** — Samsung R&D Institute, Bengaluru
Designing next-gen Neural Processing Units with Samsung Advanced Institute of Technology

Jul'17-Jun'19 **Research Assistant** — CAD Lab, Indian Institute of Science, Bengaluru
Carried out the RTL design and implementation of the Software Defined, Hardware Customizable Tensor Core for accelerating Neural Network Applications, in Chisel HDL

Jun-Aug'16 **Visiting Research Scholar [Documentation]** — INRIA, Nancy, France
Worked towards enhancing APOLLO for dynamic and speculative parallelization of programs, to incorporate random memory access patterns in the polyhedral optimization model.

Oct-Dec'15 **Research Intern [Documentation]** — Advanced Multicore Systems Lab, IIIT, Delhi
Devised a hierarchical cluster-based cache coherence scheme and analyzed the potential of long-range wireless links for multi-hop communication

Oct-Dec'14 **Student Trainee** — Texas Instruments, CEDT Delhi
Developed a cheap alternative to contact-less tachometer. The device has been in use in Junior Machines Lab at Electrical Engineering Department, DTU)

Publications

Nov'19 **Architecture of a Software Defined, Hardware Customizable TensorCore, for Deep Neural Networks [Submitted]** — DAC'20
T Sumana, **Abhishek Tyagi**, Madhava Krishna Chembati, Makesh Tarun Chandran, Ranjani Narayan and S K Nandy

Dec'19 **Optimization of Electric Vehicle Charging Management with Distributed Locational Marginal Pricing** — arxiv
Abhishek Tyagi, Ram Bhagat

Nov'19 **A Modified PFSCL Configurable Cell Apposite to Complex Logic Function Realization** — JMDET Vol.13
Neeta Pandey, **Abhishek Tyagi**

March'16 **PFSCL based Linear Feedback Shift Register** — IEEE-ICCTICT'16
Abhishek Tyagi, Neeta Pandey, Kirti Gupta

Projects

Dec'15 **Power Performance improvement in MP SoC using Thread criticality prediction**
Developed a method to predict the critical thread using information on different types of cache misses encountered and using DVFS to scale the voltage & frequency of the cores accordingly

Jan'17 **Low Cost Minituarized Potentiastat for Biosensing Applications[Documentation]**
Designed an Arduino based electronic system to perform electrochemical deposition of Polyaniline (PANI) on ITO glass electrode and glucose sensing.

Apr'16 **Synthesis and simulation of RISC Processor on Verilog HDL**
Designed a signle-bus 8-bit non-pipelined RISC processor with Verilog HDL.

Achievements

Aug'13-Jun'17 **Recepient of Prime Minister's Fellowship** — Delhi Technological University
Awarded with the prestigious scholarship for excellent all round performance in Undergraduate over 4 years

Jun'16 **Campus France Scholar**
Awarded with scholarship of €2400 to carry out internship at INRIA

Mar'15 **Runner's up & People's Choice Award** — NASA Space App Challenge
Selected for Global Nomination in among 40 projects in the competition

May'14 **Dean's List, 3rd Semester** — Delhi Technological University
Ranked 3/148 students in Electrical Engineering Department