SAHIL AGARWAL

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EDUCATION

University of California San Diego	M.S. Computer Science	2017 (expected)
IIT Bombay	B.Tech, M.Tech Electrical Engineering	2015

INTERNSHIP EXPERIENCE

University of California San Diego May 2013 - July 2013
Research Advisor- Prof Andrew Kahng *Language: C++; Tool(s): CPLEX*

- Performed **worst-case analyses of zero- skew clock trees** (ZSTs) in VLSI Circuits
- Explored and compared the upper bound of ZSTs and other functionals of a geometric point sets
- Showed ZSTs exhibit different growth rates compared to functionals of geometric point sets like Steiner trees.

KEY PROJECTS

Desktop Application for Encrypting Google Drive files Fall 2015
Course: Modern Cryptography *Language: Python; Libraries: PyQt4, PyCrypto*

- Developed an application that ensures privacy and integrity of the user's data on the cloud.
- Encryption/Decryption was done using AES block cipher in CTR$ mode. HMAC was used for authentication.

Implementation of a Parallel SAT Solver July 2014 - June 2014
Master's Thesis *Language: C++; Tool(s): GNU Parallel*

- Developed parallel algorithm using decomposition based technique based on MiniSat 2.2
- Obtained comparable performance to modern parallel solvers for unsatisfiable instances

Fall Detector and Perimeter Monitoring Unit Spring 2013
Electronics Design Lab *Language: C*

- *Developed a cheap, wearable prototype to detect and report if wearer suffers a fall or exits a safe perimeter*
- Implemented using PIC micro-controller, GSM module, GPS module, accelerometer along with a user display
- Received the Akshay Dhoke Memorial Award for prototype developed

TEACHING, LEADERSHIP EXPERIENCE

Teaching Assistant at UCSD January 2016-
Leading discussion section, holding office hours, creating exams and assignments, grading exams and assignments

- Discrete Mathematics (CSE 21) - ongoing
- Introduction to Artificial Intelligence (CSE 150) - Summer 2016
- Design and Analysis of Algorithms (CSE 101) - Winter 2016 and Spring 2016

Tutor in Practical English Training Program Fall 2013

- Part of a 7 member team to improve practical English knowledge in freshmen weak in the language
- Organized the curriculum of 30 hours of classes; tutored a class of 20 students

Institute Student Mentor April 2014 - April 2015

- Mentoring 12 freshmen; providing guidance in achieving personal, social and academic goals
- Active in dissemination of information through the Freshmen Forum and Practical English Training Program

RELEVANT COURSES

Advanced Algorithms, AI: Probabilistic Reasoning & Learning, Machine Learning, Programming Languages, Operating Systems, Cryptography, Probability & Random Processes, Graph Theory, Optimization

TECHNICAL STRENGTHS

Programming Languages	C, C++, Python, Haskell, Java, MATLAB
Hardware description	Verilog HDL, VHDL, Bluespec System Verilog

SCHOLASTIC ACHIEVEMENTS

- Obtained All India Rank of 176 in IIT-Joint Entrance Exam out of 450,000 students (2010)
- One among 35 out of over 35,000 participants selected for Orientation cum Selection Camp for the International Physics Olympiad (2010)