Varun Sah

(M): +91 8861413110, (E): varun.sah.30@gmail.com, (W): www.varunsah.com

Education

Bachelor of Engineering (Hons.), Computer Science — CGPA: **9.57/10**
Birla Institute of Technology and Science, Pilani — 2010-2014

Higher Secondary Certificate Examination (HSC-XII grade) — Aggregate: **90.33%**
Sathaye Junior College, Mumbai, MSBSHSE[1] — 2009

All India Secondary School Examination (AISSE-X grade) — Aggregate: **94.80%**
R.N. Podar Senior Secondary School, Mumbai, CBSE[2] — 2007

Experience

Software Engineer — Jul 2014-present
Intern International — Jan 2014-May 2014
Global Consumer Engineering Division (GCED), **PayPal**
Mentor: Mr. Saleem Faneeband, Principal MTS, Architect, GCED, PayPal

- Designed and implemented a 3 tier pipes and filters architecture for an automated, context aware, configurable feedback platform. Implemented in *Java* and *Node.js*.
- Implemented sentiment analysis and subject extraction in order to identify issues and raise developer bugs to responsible parties directly from customer feedback.
- Devised and implemented a multi-theaded, *PL/SQ*L based approach for migration of 3,000,000,000 records on a live database.

Research Intern — May-July 2013
Viterbi School of Engineering, **University of Southern California (USC)**
Mentors: Professor R. Jain, USC, Dr. S. Kotova, UCLA

- Gauged the degree of association between epidural administration and requirement of urinary catheterization using Biostatistics. Implemented in *R*.
- Devised clinically relevant multi-variable risk profiles by converting ordinal variables into nominal variables using a threshold bucketing technique.

Research Intern — May-July 2012
Reactor Control Division (RCD), **Bhabha Atomic Research Centre (BARC)**
Mentor: Dr. A K Bhattacharjee, Scientific Officer (H), RCD, BARC

- Jointly developed Static Analysis Software that enables detection of run-time errors during compile time in safety critical programs. Implemented in *C* and *Java*.
- Studied Program Verification techniques like Invariant Generation & Static Analysis.

Selected Publications

S. Kotova, V. Sah, N. Nayyar and R. Jain, "Thoracic Epidural Analgesia Does Not Require Prolonged Urinary Catheterization", *Academic Surgical Congress*, 2014.

Academic Honors

- Ranked 3rd among 180 graduates of the Computer Science and Information Systems (CSIS) Department, BITS Pilani with a GPA of 9.57/10. 2014
- Awarded **Viterbi-India Program Scholarship** by the IUSSTF[3]. 2013
- Awarded **Summer Research Fellowship** by the Indian Academy of Sciences. 2013
- Awarded **OPJEMS Scholarship** by the O.P Jindal Group. 2012
- Awarded **Merit Scholarship** by BITS Pilani for all semesters. 2010-2012
- Placed among the top 0.8% in the IIT-JEE among 4,68,280 candidates. 2010
- Awarded **Merit Scholarship** by Sathaye Junior College & MSBSHSE. 2007-2009

[1] Maharashtra State Board of Secondary and Higher Secondary Education
[2] Central Board of Secondary Education
[3] Indo-US Science & Technology Forum

Selected Projects

Statistical analysis of effect of epidural analgesia on urinary retention
Mentors: Professor R. Jain, USC, Dr. S. Kotova, UCLA May 2013 – Feb 2014

- Used records of 135 patients who underwent major thoracic surgery at the VA hospital over a period of three years.
- Developed statistically significant and clinically relevant risk profiles and studied the degree of association between administration of epidurals and urinary retention.

Cryptography: Achieving Privacy and Data Security
Mentor: Ms. Deepmala Agarwal, Maths Dept., BITS Pilani Aug 2013 – Dec 2013

- Analyzed pseudo-random number generation techniques used in cryptographic algorithms and implemented 2 stream ciphers: SYND[4] and 2SC[5].
- Concluded that SYND stream cipher compares favorably with 2SC in terms of time efficiency, but lacks in storage efficiency as it requires significantly larger key sizes.

Compiler for Model Programming Language
Mentor: Ms. Vandana Agarwal, Dept. of CSIS, BITS Pilani Jan 2013 – May 2013

- Parsed a Context Free Grammar for the Model Programming Language, constructed an Abstract Syntax Tree and generated x86 code for input syntax.
- Implemented features of sequential abstract data structures, explicit function calls and static flow analysis for basic looping and conditional structures.

Relevant Coursework

Probability & Statistics	Data Structures and Algorithms
Mathematics I (Advanced Calculus)	Theory of Computation
Mathematics II (Linear Algebra)	Advanced Computer Organization
Mathematics III (Differential Equations)	Operating Systems
Data Processing	Discrete Structures for Computer Science
Numerical Analysis	Computer Networks
Optimisation & Operations Research	Database Systems
Computer Graphics	Prog. Languages & Compiler Construction

Technical Skills

Programming: C/C++, Java, PL/SQL, Python, shell scripting, x86 Assembly, Node.js, PHP, HTML/CSS
Technical Packages: MATLAB, R, MySQL
Other Packages: LaTeX, Photoshop, Git

Extra-Curricular Activities

- *Targeted Savings*: Ranked 3rd among 25 ideas from Bangalore, PayPal Consumer Hackathon. 2015
- *PayPal On Delivery*: Ranked 2nd among 40 ideas from Bangalore, PayPal Global Hackathon. 2014
- *Static Analysis for Run-time Error Detection*: Ranked 2nd among 50 entries, Paper Presentation, APOGEE[6]. 2013
- *ProSwApp: Profile Switching Application*: Ranked 2nd, Cyberfiesta, APOGEE. 2012
- *Cofounder, DocInsta*, New Venture Creations: Ranked 2nd among 10 ventures. 2012
- Elected *StuCCAn*: Member, *Student's Council for Cultural Activities,* BITS Pilani: One of the 8 organizers of Oasis[7]. 2013
- Elected *Head, Department of Stage Controls,* BITS Pilani : Lead a 40 member team to organize and host all auditorium events. 2013

[4] *SYND: Fast Code-Based Stream Cipher with a Security Reduction* P Gaborit, C Laradoux, N Sendrier
[5] *2SC: Efficient Code-based Stream Cipher*; M Meziani, P Cayrel, and SM El Yousfi Alaoui
[6] BITS Pilani's annual tech fest
[7] BITS Pilani's annual cultural fest