SAURABH VERMA

Senior Undergraduate
Computer Science & Engineering
Indian Institute of Technology Roorkee

saurrv@gmail.com
saurrv.github.io
+91-8791229810

AREAS OF INTEREST

Algorithms, Operating Systems, Machine Learning & Problem Solving.

EXPERIENCE

Research Intern | Adobe Systems May 9 - July 22, 2016

- Built an end-to-end pipeline to enhance the tags of images for better content management.
- Used Python for rapid development and quick prototypes.
- Improved nearly 30%, 10% and 20% respectively in significance, relevance and diversity of tags compared to state-of-the-art image tagging engines.

Summer Intern | Morgan Stanley May 11 - July 9, 2015

Metadata Manager : Built a complete application to effectively manage the metadata, validate and trigger actions in JAVA using various frameworks such as Spring, Quartz and Apache CXF with focus on extensibility and flexibility of application.

ACADEMIC BACKGROUND

Qualification	Year	Institution	Grade / Percentage
B.Tech. Computer Science	2013-17 (Expected)	Indian Institute of Technology Roorkee	8.993
Higher Secondary (12^{th})	2012-13	Bal Bharati Public School	90.8%
High School (10^{th})	2010-11	Bal Bharati Public School	10.0

PROJECTS

Using Deep Learning to improve content retrieval and recommendation Aug 2016 - Present

- Tackling trivial, redundant and outdated online content to improve maintainability and usability of website.
- Problem: Given a large corpus of news articles, determine a popular and concise set of pieces.
- https://github.com/saurv4u/Deep-Learning-for-Content-Retrieval

Algorithm Library Dec 2013 - Present

- Maintain my own implementations of Algorithms and Data Structures commonly used in Algorithmic Contests.
- https://github.com/saurv4u/Algorithm-Library

Handwritten Bangla Character Recognition Feb - Mar 2016

- Developed a classifier for frequently used Bangla characters, both basic and compound.
- Achieved an accuracy of 76% for compound characters using Convolutional Neural Network.
- https://github.com/saurv4u/Handwritten-Bangla-character-recognition

Event Exploration Engine Feb - Mar 2016

- Contrived an easy to use, dynamic and robust user interface for a key phrase based news event exploration engine (E3) using AngularJS and Django.
- https://github.com/saurv4u/Event-Exploration-Engine

Gesture based Mouse Control Aug - Oct 2014

- Programmed a gesture based Mouse Controller in Python using PyMouse, OpenCV.
- https://github.com/saurv4u/GestureMouseControl

Software Security University of Maryland (Coursera) Feb - Mar 2015

- Exploited memory errors in vulnerable C code. Carried out stack smashing, buffer overflow, format string vulnerability, stale memory usage attacks etc.
- Found web vulnerabilities in badstore.net for attacks like SQL Injection, spoofing etc.
- Found memory errors with symbolic executor KLEE and compared them with black box fuzzing tool, radamsa.

SIC Disassembler Feb - Mar 2015

- Programmed a disassembler for Simplified Instructional Computer in C++ which supported jump, arithmetic, logical, memory instructions and indexed addressing.
- https://github.com/saurv4u/SIC-Disassembler

SKILLS

- **Algorithmic Programming :** Regularly participate in programming contests that test knowledge of data structures and algorithms. Solved more than **700** problems on programming websites like Codeforces, Topcoder, Hackerrank, Spoj, Codechef etc. with the username **saurv4u**.
- **Programming Languages :** Proficient - C++, JAVA and Python. Basic - Haskell and Bash.
- **Additional Courses :** Public Speaking, Innovation & Business Models, Software Security, Machine Learning, Artificial Intelligence, Cryptography.

ACHIEVEMENTS

- **ACM ICPC 2015**: Ranked **4th** among 1572 teams in Amritapuri regional online and **2nd** among 1112 teams in Chennai regional online contest of the International Collegiate Programming Contest (ICPC), an annual programming contest among universities of the world.
- **Topcoder Collegiate Contest 2016**: Ranked **2nd** in Topcoder Collegiate Contest India 2016 online round and **5th** in onsite round. It is an algorithmic programming contest open to all university students in India.
- **Amrita Summer Camp 2015** : Selected in top **25** students all over India for participating in Amrita Summer Camp 2015 held with the objective to train students in advanced algorithms and data structures required in international competitions.
- **Build The Shield 2016**: Finished **24th** in Attack Defense CTF and **25th** in Jeopardy style CTF all over the country in Build The Shield organized by **Microsoft**.
- **Kishore Vaigyanik Protsahan Yojana (KVPY) :** Got selected in the SX Stream in 2012-13 batch. It is a National Program of Fellowship in Basic Sciences, initiated and funded by the Government of India to support young talented scientists.
- **Joint Entrance Exam 2013** : Ranked 742 in JEE Advanced out of 1400000+ candidates. It is an entrance examination conducted for admission in various engineering courses in the top institutes of the country. Scored 120/120 in JEE Mains Mathematics Section.
- Recipient of Gold Medal for academic excellence in school for standing **first** for 6+ consecutive years.

POSITIONS OF RESPONSIBILITY

- **Programming and Algorithms Group**
  - Organized and curated problems for international and intra-college programming competitions.
  - Gave lectures on data structures and algorithms.
  - https://pag.sdslabs.co/