

Shivam Khandelwal

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EDUCATION

IIIT HYDERABAD

B.TECH. AND M.S. BY RESEARCH

Expected Graduation: 2018

Cumulative GPA: 8.02/10

COURSEWORK

Software Quality Engineering
Advanced Computer Networks
Principles of Information Security
Information Retrieval and Extraction
Database Systems Implementation
Machine Learning + SMAI
Usability Engineering

ACHIEVEMENTS

- **Research Award** in Spring, 2016.
- Reported **security vulnerabilities** in multiple products & organization including Directi (cam), Codechef, Flock, XGEN+, IMS, etc.
- Winner @ Megathon Hackathon.
- Runner up in institute CTF by Intuit for Web and Malware Analysis categories.

POSITIONS

- **Teaching Assistant** for Software Engineering (SSAD) and IT Workshop.
- Organising team for ACM ICPC Kolkata (2015, 2016) and Chennai (2015, 2016) Onsite Regionals.
- Member of Student Parliament '16
- Administrator at Open Source Development Group (OSDG).

SKILLS

PROGRAMMING

Day to Day:

• Python • PHP • MySQL • JS

Familiar:

• Shell • C/C++ • Ruby • CSS

SYSTEMS RELATED

Day to Day:

• AWS (Elasticache, RDS, ec2, S3..)

• nginx • apache2 • memcached

• LDAP • nagios • dovecot • Chef

• named • rsnapshot ...

Familiar:

• Wazuh • Snort

OPERATING SYSTEMS

Linux ❤️

EXPERIENCE

FACEBOOK | PRODUCTION ENGINEERING INTERN

Jun 2017 – Sep 2017 | London, UK

- Worked with **MySQL Infrastructure** team on the continuous backup restore system (ORC) to bring isolation in its components making horizontal scaling possible.
- Improved the existing design to have different pools with specific configurations and resources auto balancing in between them.

BERKMAN KLEIN, HARVARD UNIVERSITY | GOOGLE SUMMER OF CODE

May 2016 – Aug 2016 | Remote

- Built HTTP framework upon TimeGate implementation adhering to **RFC7089 guidelines** for Time-Based Access to the Resource States.
- Designed and developed strategy for **distributed and resilient version** of Amber, for achieving the vision of 404 free Internet.

CODECHEF / DIRECTI | SOFTWARE ENGINEERING INTERN

Dec 2014 – May 2017 | Mumbai, IN & Remote

- Worked on improving cache layer over legacy code-base and **scaling the architecture** horizontally (involving twemproxy).
- Developed Ember.js components for online IDE (Code, Compile & Run) & commenting system (similar to Disqus).

IIIT HYDERABAD | STUDENT SYSTEMS ADMINISTRATOR

Aug 2016 – Present | Hyderabad, IN

- Moved existing infrastructure (Zimbra, LDAP, etc.) to **HA using DRBD & Pacemaker**.
- Responsible for on call, maintenance, and deployment of institute-wide infrastructure and services (Squid, LDAP, Email, lists, NS, etc).

RESEARCH EXPERIENCE

SOFTWARE ENGINEERING RESEARCH CENTRE

May 2015 – Present | Hyderabad, IN

- Pursuing master degree under **Prof. Raghu Reddy** on Gamification in SE domain.
- Developed and designed framework for Gamifying any web-based application within few minutes. The approach consisted of event-driven architecture with dynamic rendering of Ember.js components based on Rule Engine.

TATA RESEARCH DEVELOPMENT AND DESIGN CENTRE

May 2016 – July 2016 | Pune, IN

- Conducted Systematic Literature Review and Systematic Mapping Study on Domain Specific Languages domain. Analysed over 1000 candidate research papers.

SELECTED PROJECTS

WIKIPEDIA SEARCH ENGINE | IRE, PYTHON

- Developed Search Engine for Wikipedia dump (64GB) using external merge sort and secondary indexing with query time under 5s. Ranked results by calculating relevance of search query to results using tf-idf.

INTRUSION DETECTION SYSTEM | SKLEARN, PYTHON

- Conducted statistical analysis on KDD'99 dataset by DARPA using SVM, RF & NN to classify as attack/safe, and further into DoS, U2R, R2L & Probing attack.

PUBLICATIONS

[1] S. Khandelwal, S. Sripada, and Y. R. Reddy. Impact of gamification on code review process: An experimental study. In ISEC, pages 122–126. ACM, 2017.

[2] S. K. Sripada, Y. R. Reddy, and S. Khandelwal. Architecting an extensible framework for gamifying software engineering concepts. In ISEC, pages 119–130. ACM, 2016.