Prakhar Agarwal

pkhrag@iitk.ac.in | +91-9468652335 | Github:pkhrag

EDUCATION

IIT KANPUR
BTech in Computer Science & Engineering
Expected May 2019 | Kanpur, India
Cum. GPA: 9.64 /10.0

CENTRAL PUBLIC SCHOOL
Class 12 | RBSE
Grad. 2015 | Rajasthan, India
Percentage: 89.8%

ACHIEVEMENTS

- **2nd Rank** , Championship Value Prediction (CVP-1), ISCA-2018
- **All India Rank 126** among 1.3M in JEE ADVANCED 2015
- **Academic Excellence Award** for 2015-16 and 2016-17 by IIT Kanpur
- **0.1 Percentile** , JEE MAINS 2015
- **KVPY Fellow | All India Rank 232** IISc Banglore, 2014
- **1 Percentile** , NSEP 2014, HBCSE
- **Qualified** , NSEC 2014, HBCSE

COURSEWORK

Security
Cyber Security of Critical Infra.
Computer System Security
Secure Memory Systems
Systems
Computer Architecture*
Compiler Design
Operating Systems*
Computer Networks
Computer Organization
Algorithms & Data Sciences
Data Structures & Algorithms
Advanced Algorithms*
Machine Learning Techniques
* : A* Grade for exceptional performance

SKILLS

PROGRAMMING
Proficient
C • C++ • Python • x86 Assembly
Familiar
MIPS • Go • Java • Javascript
UTILITIES
Bash • Git • LaTeX• GDB • REST • ROS
PLATFORM
Linux(Ubuntu) • Windows • Arduino
Android • Gem5 • ChampSim

WORK EXPERIENCE

SAMSUNG ELECTRONICS HEADQUARTERS | Cloud Lab
Software Engineering Intern | May'18 – Jul'18 | Suwon, South Korea
- Designed a prototype for **Event Monitoring and Corrective Actions** for Virtual Network Functions and Open Network Automation Platform environment.
- Developed a simulator for Data Collection, Analytics and Events module **ONAP** using various APIs like **REST-API, Kafka-python, Durable-rules** .
- The simulator can be used for **testing** Samsung's solutions for **virtualization** .

BOMBAY STOCK EXCHANGE | IT Department, Security Team
Network Security Intern | May'17 – Jul'17 | Mumbai, India
- Worked on designing and improving **Network Security Architecture** .
- Collaborated with **IBM** team to secure Bombay Stock Exchange Network.
- Discovered **vulnerabilities** and audited BSE network with **SEBI** compliance.

PUBLICATION

DFCM++: AUGMENTING DFCM WITH EARLY UPDATE AND DATA DEPENDENCY-DRIVEN VALUE ESTIMATION
International Symposium on Computer Architecture (ISCA-2018)
Los Angeles, California, US

PROJECTS

SIDE-CHANNEL ATTACKS USING SPECULATIVE EXECUTION
Prof. Biswabandan Panda
Aug'18 – Present | IIT Kanpur
- Using Speculative Techniques (**cache, prefetching, out-of-order execution, value prediction, branch prediction**) to discover new side-channel attacks.
- Mounted **Flush-Reload, Flush-Flush, and Prime-Probe** on latest processors.
- Using **Gem5** simulator to explore attacks based on value and branch prediction.

GOTHAM COMPILER | Prof. Subhajit Roy
Jan'18 - Apr'18 | IIT Kanpur
- Implemented compiler for fully functional subset (**arrays, data types, loops conditionals, functions**) of **Go** programming language in **Python** from scratch.
- Incorporated advanced features like **structures, pointers, multi-dimensional arrays, operator overloading, string concatenation, recursion** .

AUTONUMOUS UNDERWATER VEHICLE | Team AUV-IITK
Prof. K.S. Venkatesh & Prof. Sachin Shinde
Dec'15 – Apr'17 | IIT Kanpur
- **Runner-up** at National level Competition **SAVe-NIOT** (2016) in debut attempt.
- Robot **detects** and **follows line, hits buoy, fires torpedoes** , and **drops objects** .
- Used **ROS** (Controls), **OpenCV** (Image Processing) and **Gazebo** (Simulation).

EXTRACURRICULAR ACTIVITIES

TUTOR
Introduction to Computing (ESC101) | Jul'18 - Present
Conducting **Tutorial Lectures** for a batch of **40** students, once every week.
Designing and Grading **Lab Sessions, Quizzes, Theory** and **Lab Exams** .

ACA COORDINATOR
Department Student Body | Jan'17 - Present
Organized **CTFs, Hackathons, Freshers, Farewell, Happy Hours** and other events.