

## EDUCATION

- **Indian Institute of Technology, Kanpur** India  
*Bachelor of Technology in Computer Science; CPI: 9.01* July. 2015 – June. 2019
- **Army Public School, Patna** India  
*All India Senior School Certificate Examination; Grade XII; Percentage: 96%* April. 2013 – March. 2014

## SCHOLATIC ACHIEVEMENTS

- **Academic Excellence Award** by IIT Kanpur for the year 2017-18.
- **All India Rank 977 in JEE Advanced'15**: Secured the rank among 100 thousand candidates qualifying JEE Main.
- **All India Rank 553 in JEE Main 2015**: Secured the rank among 1.5 million candidates.
- **All India Rank 24** in Special Class Railway Apprentice 2015 among 300 thousand candidates.
- **100/100 in Informatic Practices**: Outstanding performance in Grade XII course on Java, MySQL and HTML.

## WORK EXPERIENCE

- **Amazon India**, *Software Engineer-Intern, India-Payments Team* May'18 - Jul'18
  - **Work Description**: Worked on Unified Payments Interface, a payment method that allows bank to bank instant transfer 24x7. I was responsible for automating the pipeline for continuous deployment of new code changes.
  - **Integration Tests**: Wrote integration tests for four APIs including **Collect** API. These tests are used as approvals for progressing new changes through the pipeline into production environment.
  - **Workflow script**: Wrote a script that would partially automate the stuck shipment transactions which when done manually took 4 hours of effort from 4 individuals working in parallel for 63 orders.

## PROJECTS

- **Java Compiler**, *Course Project, Prof. Subhajit Roy* Jan'18 - Apr'18
  - **Description**: In a group of 3 members, made a compiler in python that parses a subset of Java grammar and generates an intermediate representation that could be converted to x86 assembly language.
  - **Features Implemented**: Objects, method overloading, nested arrays, strings, interfaces, block scoping, basic type checking and self generated error messages. Arithmetic, logical and relational operations were supported.
- **Https Proxy Server**, *Course Project, Prof. Amey Karkare* Jan'18 - Apr'18
  - **Description**: Built an http proxy web server in *haskell* that restricted access to admin-defined blacklisted sites.
  - **Concurrent server**: Multi-threaded server with MVar semaphore in order to share data among the threads.
  - **Polling Mechanism**: Implemented polling to avoid blocking send and receive operations with destination server.
- **Buffer Vulnerabilities Identifier for C**, *Supervised Project, Prof. Subhajit Roy* May'17 - Jul'17
  - **Objective**: Aimed to reduce possible buffer overflow cases in *C* by identifying memory sensitive snippets.
  - **VSCode Extension**: Implemented an extension that could check as well as replace these snippets.
  - **Implementation**: "Check" plugin uses *pycparser* to generate *AST* of the user code and marks unsafe snippets in the code. "Replace" plugin allows the user to replace the marked code with preset alternative.
- **NachOS Extensions**, *Course Project, Prof. Mainak Choudhary* Aug'17 - Nov'17
  - **Overview**: Extended the O/S to perform basic system functions including Fork, Join, Exec, Sleep and Exit.
  - **Scheduling Algorithms**: Non Pre-emptive FCFS, Shortest Job First, Pre-emptive Round Robin and UNIX.
  - **Memory Access**: Shared memory allocation, demand paging and page replacement algorithms like FIFO, LRU.

## PROGRAMMING SKILLS

- **Languages**: C++, Python, Javascript, Haskell, Java **Web Technologies**: CSS, Node.js, Django
- **Utilities**: Linux, Git, Bash, Vim, L<sup>A</sup>T<sub>E</sub>X, MySQL, MIPS Assembly Language

## COURSEWORK

|                                  |                       |                        |                        |
|----------------------------------|-----------------------|------------------------|------------------------|
| Data Structures and Algorithms   | Computer Organization | Computer Networks      | Compiler Design        |
| Computer Systems Security        | Database Systems      | Operating Systems      | Distributed Systems    |
| Introduction to Machine Learning | Software Engineering  | Concurrent Programming | Functional Programming |

## POSITIONS OF RESPONSIBILITY

- **Student Guide**, Counselling Service: Helped a group of 6 freshmen get acclimated to college environment.
- **Sr Executive, Hospitality**, Inter-IIT Sports Meet: Responsible for accommodation of 2700+ participants.

## MISCELLANEOUS

- Made a **search engine** limited to web pages of IIT Kanpur and student profiles using python scrapy web crawler and elastic search technologies. Link - <https://tinyurl.com/yaz7lmr2>
- Made an application for Code.Fun.Do 2017, which predicts probable objects in picture & provides appropriate wiki links.