Hariom

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Academia

Year	Degree/Certificate	Institute	CPI/%
2018 - Present	M.Tech(CSE)	Indian Institute of Technology, Kanpur	8.67/10
2018	B.Tech(CSE)	Haldia Institute of Technology, Haldia	8.84/10
2014	AISSCE(XII)	Kendriya Vidyalaya Garhara, Begusarai	91.2%
2012	AISSE(X)	Kendriya Vidyalaya Garhara, Begusarai	9.8/10

Scholastic & Co-Scholastic Achievements

- Secured **All India GATE Rank 713** in Computer Science and Engineering paper in 2018
- Secured **All India Rank 1257** in competitive coding contest **TCS Codevita 2017** among the 99,473 participants
- Among **top 5%** out of 2935 students on completing Introduction to Modern Application Development offered by IIT Madras
- Got **Outstanding** grade under National Service Scheme for tree plantation drive and other social works at HIT Haldia

Key Projects & Research

- **Adversarial Malware Generation**(*May'19 - Ongoing*) **Dr. Sandeep Kumar Shukla**
  - Researching on different methods on evading ML classifiers based on API call sequences or presence/absence features
  - Implementing adversarial malware generation using **GAN** with modification in full black-box setting by building on the works of *Weiwei Hu, Ying Tan "Generating Adversarial Malware Examples for Black-Box Attacks Based on GAN"*
- **Assignment Portal & Autograder**(*Jun'19 - Ongoing*) **Dr. Pramod Subramanyan**
  - Successfully built and deployed a web portal for assignment submission, penalty, autograding and student management
  - **Django/Postgres/Nginx** backend was used for web development. **Dockers** were used for isolated code execution
  - This web portal is live and being used for Computer Systems Security course offered by Department of CSE, IIT Kanpur
- **Secure Procurement - Hyperledger Business Network**(*Mar'19 - May'19*) **Dr. Sandeep Kumar Shukla**
  - Learned about blockchains with focus on Hyperledger Networks, Fabric and worked on **IBM Hyperledger composer**
  - Developed a Hyperledger Business Network which constituted of Participants like Vendors, Consumer, Authorities who float requirements or bids or grant permissions to carry out asset procurement in a legal tamper proof setting
  - The main challenge was to write transactions to ensure principle of least privilege as well as data hiding in network. Transactions were written in **Javascript** and access rules were written in **Hyperledger Access Control Language**
- **Anomaly Classifiers for Cyber Physical Systems**(*Sep'18 - Dec'18*) **Dr. Sandeep Kumar Shukla**
  - Analysed and plotted data from Power Grid, Secure water treatment testbed and Military network environment(KDD'99)
  - Built SVM, Random Forest, MLP, etc. machine learning models after looking at the analysis of different features
- **Stackoverflow Questions Multi-Tagging**(*Jul'18 - Dec'18*) **Dr. Piyush Rai**
  - Cleaned raw Stackoverflow data consisting of questions, answers and titles and applied **NLP** techniques like **POS tagging** and **Stemming**. **TF-IDF Vectorizer** was used to extract text features in sublinear term frequency setting
  - Trained MLP, Random Forest and Stochastic Gradient Descent ML classifiers which gave binary output vector for tags
- **Natural Language Calculator**(*Jul'17 - Apr'18*) **Mr. Sourav Mandal**
  - Built a simple rule based arithmetic calculator to solve single sentence mathematical word problems as B.Tech project
  - Outcome - Bhattacharjee D, Hariom, Mandal S, Naskar SK. A Simple Arithmetic Calculator to Solve Single Sentence Mathematical Word Problems , Information Technology and Applied Mathematics 2019 ,(In press) Springer
- **FastGrasp - A Learning Management System**(*Jun'17- Jul'17*) **Mr. Nazir Hussain**
  - A website where students can join multiple courses, view lectures, submit assignments, take quizzes, track progress and get certificates and teachers add lectures and PPTs, reading materials, prepare MCQ test or quizzes and track student progress. MVC with **Model(Java beans, EJB & JPA)**, JSP for view, Sevlet for controller with MySQL database.
- **Shopkart - Online Store**(*Jan'17 - Feb'17*) **Mr. Anindya Bannerjee**
  - An e-commerce application where consumers can browse through the products or apply category filters. User can buy products after after inquiry, view ratings of other products, their shopping history and give feedback of purchased items
  - The technology stack used in this project was **Java/Android/SQLite** front-end and **Node.js/PostgreSQL** backend

Technical Skills

- **Programming Languages:** C, C++, LaTeX, Python, Java, Bash, SQL, Golang, HTML, Javascript, GNU Octave
- **Software and Libraries:** Docker, Composer Playground, Express.js, Android Studio, EJB, Eclipselink, Django

Positions of Responsibility

- Challenge Lead(CTF) for CSAW India, Taught Computer Networks & Internet security at IIT Kanpur Summer School 2019

Relevant Courses

Software Architecture | Introduction to Machine Learning | Blockchain Technology and Application
Computer Systems Security | Cyber Security of Critical Infrastructure