Tanay Bhartia

Undergraduate Student | Computer Science and Engineering

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Education

Dual Degree 2015-2020	**Indian Institute of Technology Kharagpur** Computer Science and Engineering	CGPA : 8.75/10.00
2015	**Higher Secondary Education (CBSE)**	Percentage : 94.2/100
2013	**Secondary Education (CBSE)**	CGPA : 10/10

Professional Experience

July 2019 – May 2019 | **Software Engineering Intern, Microsoft IDC, Hyderabad**

- Created an end-to-end High Availability Disaster Recovery (HADR) solution for ensuring reliability, consistency and durability of the Kaizala Address Book using C#.
- Successfully developed and tested the new feature on top of the existing solution of Kaizala.
- Developed a Resource Health Dashboard to identify the root cause of failures in the live-service.
- Created the end-to-end dashboard using C#, Azure Monitor APIs, Angularjs and Highchart.

C# | Azure Cloud Services | Angular | HighChart

July 2018 – May 2018 | **Software Intern, Cateina Technologies, Mumbai**

- Developed a P2P Insurance platform using hyperledger-composer as the binding smart contract.
- Built a blockchain-based document management system with the principal objective being digital signing and verification to ensure authenticity and integrity of the documents.
- Used Inter Planetary File System (IPFS) as the file storage layer and Stellar as the blockchain layer.
- Developed several RESTful APIs using NodeJs, for document management such as encryption(AES, RSA) - decryption, signing-verification, uploading- retrieving from IPFS, etc.

NodeJS | Angular4 | IPFS | Stellar | Hyperledger Composer

Projects

Democratic Cloud Federation — July 2019 - Present

M.Tech Project under the supervision of Prof. Sandip Chakraborty.

- Designed an architecture for federated Infrastructure-as-a-Service (IaaS) provisioning using blockchain technology.
- The proposed architecture is free from any central broker and supports decentralisation, transparency, autonomy of service providers, immutability in information exchange for dispute-free billing and fairness for service provisioning.
- The architecture comprises of two layers of blockchain : public (exposed to users to submit their requests, works as a means to broadcast numerous requests) and private (for Cloud Service Providers to interact and provision resources to the system).
- Implemented the public layer on Ethereum. Created a private network to deploy and test the contract on multiple machines.
- Currently implementing the private layer of the proposed architecture with three CSPs on Hyperledger Fabric.

Ethereum | Hyperledger Fabric | Solidity | NodeJS | Golang

Implementing TCP over UDP — March 2018

Term Project : Computer Networks

- Implemented a basic version of TCP stack over UDP sockets with flow and congestion control (TCP Tahoe).
- Used multiple threads for different components of the service (listener, sender, congestion controller).

C++ | Networks

Chairity March 2018

Term Project : Database Management System

- Developed a web-app to create/modify/delete events for charity purposes and to let users donate to those events.
- Implemented the application using PHP to link the database and the front-end. Used MySQL as the database.

PHP | MySQL | HTML | CSS

Heroes of Aleppo October 2017

Term Project : Intelligent Game Design

- Developed a 2D third-person shooter game using PyGame about Aleppo bombings where the protagonist is a relief officer.
- Implemented basic AI algorithms(Movement, Decision making) and path finding algorithms like BFS, SSG, RRT.

PyGame | BFS | SSG | RRT

Skills

Programming	Microsoft .Net (C#), C, C++, Python, Node.JS, Solidity, Java, SQL
Tools & Frameworks	Ethereum, Hyperledger Fabric, Git, Truffle, Angular
Software	Netbeans, Android Studio, Visual Studio

Teaching and Mentoring

Present – July 2019 | **Teaching Assistant, Machine Learning, IIT Kharagpur**
Teaching Assistant for the Machine Learning (CS60050) course offered in Autumn 2019-2020 session which has more than 250 students enrolled.

Relevant Coursework

• Object Oriented Systems (Ongoing) • Social Computing (Ongoing) • Cloud Computing • Deep Learning • Machine Learning • Artificial Intelligence • Natural Language Processing • Image Processing • Operating Systems* • Computer Networks* • DBMS* • Compilers* • Computer Organization and Architecture* • Software Engineering* • Theory of Computation • Algorithms* • Principles of Programming Languages • Cryptography and Network Security • Formal Languages and Automata Theory • Probability and Statistics

** Course had an integrated lab component*

Achievements

2015 Ranked among top 0.8% of 1.5 lakh participants in JEE Advanced 2015
2015 Ranked among top 0.2% of 1.5 million participants in JEE Mains 2015

Positions of Responsibility

May 2019 – July 2018 | **President, Codeclub, IIT Kharagpur**
Led a society comprising of 40 members aimed at increasing technical awareness in the campus.

- Organised up.AI Summit 2018 : A two and a half-day event focused on using AI for social good which witnessed the active participation of more than 900 students.
- Headed the event management and sponsorship team of up.AI. Secured major sponsorship from Capillary Technologies, Wadhwani AI, Jio.
- Conducted various other activities such as CodeNites (Monthly Coding Contest), Competitive Programming Workshops, Microsoft Code.Fun.Do, HSBC ML Hackathon.

Extra Curricular Activities

- Volunteer for National Service Scheme(NSS), IIT Kharagpur
- Part of the Hall Badminton Team in General Championship Sports, IIT Kharagpur 2018.
- Part of the 4th-placed team in CBSE Basketball Clusters(Zonal) 2013-14.