

# Tezan Sahu

THIRD YEAR UNDERGRADUATE

IIT Bombay, India

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## Education

### IIT Bombay

B.TECH. IN MECHANICAL ENGINEERING

MINOR IN COMPUTER SCIENCE AND ENGINEERING

August 2017 - Graduation 2021

CPI: 9.87

### Jaipuria School

INTERMEDIATE/+2

2017

96.2%

### St. Mary's ICSE School

MATRICULATION (ALL INDIA RANK - 1)

2015

99.2%

## Work Experience

### WalletSocket Inc.

SMART CONTRACT & DEVOPS INTERN

Mumbai

Dec 2019

- Successfully completed the development testing of smart contracts for Pay0K, a crypto payment processor that integrates a variety of merchants
- Configured Istio proxies to build a service mesh for the microservices deployed on Kubernetes to communicate by abstracting the network

### WandX Solutions Pvt. Ltd.

BLOCKCHAIN ENGINEERING INTERN

Bengaluru

May-Jul 2019

- Developed a solution for WandX Desktop Application by aggregating multiple cryptocurrency exchanges to display best trades to the user
- Engineered smart contracts for implementing confidential transactions of fiat-backed stable coins using AZTEC protocol for WalletSocket Inc.
- Developed a new Security Token standard around ERC721 tokens using IPFS for storing proofs, along with proof verification strategies
- Fabricated Python microservices that would communicate with CouchBase and Ethereum using asyncio, uvloop & ØMQ to manage assets

### Encoro Solutions Pvt. Ltd.

BACKEND DEVELOPER

Mumbai

Jan-Mar 2019

- Aided in formalizing and implementing the mathematical model to figure out the key nodes as part of Social Network Analysis
- Analysed and evaluated the model to suggest the incorporation of various new parameters to improve the model

### Dunya Labs (India) Pvt. Ltd.

BLOCKCHAIN RESEARCH INTERN

Bengaluru

Dec. 2018

- Analyzed block data worth several days to formulate and test metrics for the middleware being developed on the EOS Blockchain
- Explored the working and applications of Zero-Knowledge Proof Systems such as SNARKs, STARKs and Bulletproofs on various blockchains
- Brainstormed about middlewares and services that could be built on top of upcoming blockchains such as Dfinity and Polkadot
- Studied research papers and articles involving Blockchain Governance, Sharding Solutions, Accumulators and Anonymous Credentials

## Projects

### zkCompound: Privacy-Preserving Compound Lending on Ethereum [Code]

Hackathon Project

HACK IN OUT 6.0, BENGALURU

Oct 2019

- Developed a novel solution using zero-knowledge to achieve complete verifiable privacy while performing compound lending & borrowing
- Revamped the Compound Finance Protocol smart contracts to integrate the zero-knowledge proofs verification offered by AZTEC Protocol
- Designed an aesthetically pleasing front-end for the application to make end-user experience as intuitive & seamless as possible

### Berkeley Clock Synchronization Algorithm [Code]

CSE, IIT Bombay

PRINCIPLES OF CONCURRENT AND PARALLEL PROGRAMMING COURSE PROJECT UNDER PROF. R.K. SHYAMASUNDAR

Sept - Oct 2019

- Implemented the Clock Synchronization algorithm used in Berkeley UNIX [based on this work] to solve the problems in distributed systems
- Used UDP sockets in python to communicate between the master node & slave nodes to provide a fault-tolerant time difference averaging

### TEXTURify: Cross-Platform Application for Image Quilting [Code]

CSE, IIT Bombay

DIGITAL IMAGE PROCESSING COURSE PROJECT UNDER PROF. AJIT RAJWADE

Sept - Oct 2019

- Implemented the Image Quilting techniques for Image Texture Synthesis & Transfer [based on this work] & obtained convincing results
- Fabricated a cross-platform application around the implementation using Ionic & FastAPI to transfer desired textures onto target images

### Excalibur: Ethereum-Based Voting Solution [Demo] [Presentation]

Hackathon Project

MICROSOFT CODEFUND0++, IIT BOMBAY

Aug 2019

- Developed an end-to-end Decentralized Voting Solution to organize secure, reliable, and transparent elections using Azure Blockchain
- Applied the concepts of cryptography to ensure anonymity of voters on a public blockchain during the election, yet making the votes verifiable
- Designed the front-end for the Decentralized Application using Angular and developed the service to encrypt and decrypt votes using Python

## LendZ: Zero Knowledge Loans on Ethereum [Code]

Hackathon Project

ETHINDIA HACKATHON 2.0, BENGALURU

Aug 2019

- Innovated on Lendroid by implementing protocol-level changes to incorporate the Zero Knowledge toolkit of AZTEC into their smart contracts
- Designed an end-to-end DApp to allow users to lend in Zero Knowledge on Ethereum using Node.JS for the server & Angular for the front-end

## Pay-No-Load: A Plugin for the Aleth.io Ethereum Lite-Explorer [Code]

Hackathon Project

BEYOND BLOCKCHAIN HACKATHON, GITCOIN

Jul 2019

- Created a plugin for the Aleth.io Lite Explorer to primarily decode Ethereum transaction payloads using the corresponding contract ABIs
- Incorporated additional functionalities to display metadata about token contracts and all token balances of a given Ethereum account

## Waffle-CLI: An Explorer for Ethereum [Code]

Hackathon Project

BEYOND BLOCKCHAIN HACKATHON, GITCOIN

Jul 2019

- Created a CLI tool, similar to an Ethereum block explorer, curated for developers to monitor smart contracts, transactions and events
- Enabled custom filtering of transactions and events based on function signatures and local timestamps, along with ENS Domain resolution

## Attendance System using Face Recognition [Code] [Video]

Technical Council, IIT Bombay

INSTITUTE TECHNICAL SUMMER PROJECT

May - Jul 2018

- Led a team of 4 members to construct an Attendance Recording Bot that could mark the attendance of students using face recognition
- Developed 2 Android apps, one for the students to check their attendance and another for controlling the bot using bluetooth
- Deployed a database on a Pythonanywhere Server for storing the information about students and professors using Django framework
- Implemented the "face\_recognition" model after tuning the parameters on the faces of 200 students and attained an accuracy of around 95%

## Reading Project On "Machine Learning" [Report]

MnPClub, IIT Bombay

SUMMER OF SCIENCE

May - Jul 2018

- Implemented regression, classification, clustering and data retrieval algorithms along with various neural networks on datasets involving real estate, sentiment analysis, Wikipedia document classification, Speech recognition, movie recommender systems and animal recognition
- Analyzed research papers about Regression, Principle Component Analysis (PCA), Independent Component Analysis (ICA), Spectral Clustering, different Distance Metrics, Convolutional Neural Networks (CNNs) and Long-Short Term Memory (LSTM) Neural Networks.

## Decentralized Application for Land Registration [Code]

Hackathon Project

- Developed a Decentralized Application (DApp) for land registration and collateralization for borrowing/lending using the APIs of Lendroid
- Tokenized the land based on the area and location so that it could be used as a collateral while borrowing/lending cryptocurrency
- Successfully deployed 4 smart contracts to implement the above functionality on Ethereum's Kovan Testnet as the Proof of Concept

## Achievements

Present	<b>Department Rank 1</b> , Mechanical Engineering Department, IIT Bombay	IIT Bombay
Aug 2019	<b>1st Place</b> , Microsoft CodeFunDo++ Institute-Wide Hackathon	IIT Bombay
Aug 2019	<b>Winner</b> , ETHIndia Hackathon 2.0 [Also won API Prizes of AZTEC Protocol, Lendroid & Matic Network]	Bengaluru
Jul 2019	<b>1st Place</b> , Aleth.io Lite Explorer Freestyle Track, Gitcoin Beyond Blockchain Hackathon	Online
Jul 2019	<b>2nd Place</b> , Aleth.io API Freestyle Track, Gitcoin Beyond Blockchain Hackathon	Online
2018-19	<b>Special Mention</b> , Hostel 3 Technical Awards	IIT Bombay
Aug 2018	<b>Top Hack Prize</b> , Lendroid track, ETHIndia Hackathon	Bengaluru
2017	<b>All India Rank 514</b> , JEE Advanced Examination, among 0.22 million aspirants	India
2015	<b>All India Rank 1</b> , ICSE Board Examination, among 0.16 million students	India

## Positions of Responsibility

### Co-Founder

IIT Bombay

BLOCKCHAIN@IITB CIRCLE, THE WEB AND CODING CLUB

Aug 2018 - Present

- Organized and gave talks on Blockchain Basics, Decentralization Application (DApp) Development on Ethereum and Scaling Solutions
- Conceptualized and built the community Facebook group and Slack channel to circulate reading material and encourage discussions
- Established ties with Dunya Labs, Matic Network, bitgrit, Blockchained India, Devfolio and multiple other sponsors.

### Convener

IIT Bombay

THE WEB AND CODING CLUB, INSTITUTE TECHNICAL COUNCIL [WEBSITE]

Apr 2018 - Mar 2019

- Part of a team of 22 students, catering to 5000+ coding enthusiasts and students on campus through talks, workshops, hackathons, etc.
- Organized and spoke at sessions on Web Scraping, Game development, Version Control, Open Source and Blockchain Essentials
- Contributed towards developing and maintaining the website for Inter IIT Tech Meet 2018, held at IIT Bombay
- Conceptualized and co-founded the Blockchain@IITB Circle to promote and encourage blockchain research and development in the campus

### Class Representative

IIT Bombay

MECHANICAL ENGINEERING DEPARTMENT [WEBSITE]

Aug 2018 - Present

- Played an active role in scheduling lectures, labs and examinations during the semesters along with talks, workshops and site visits
- Conveyed the opinions of peers effectively to the respective professors and department council members as and when required

## Web and Marketing Coordinator

THE ENTREPRENEURSHIP CELL [\[WEBSITE\]](#)

*IIT Bombay*

*Mar 2018 - Feb 2019*

- Led the organizing team for I\_Hack Hackathon, E-Summit 2019, reaching out to 50+ companies and 500+ hackers
- Single-handedly developed the website for the DLT Innovation Challenge, a pan-India level hackathon based on Distributed Ledger Technology
- Contacted 200+ companies to explore new synergies for Eureka! 2018 and E-summit 2019, ensuring completion of all promised deliverables
- Mentored 20 freshmen in case study solving, BMC filling and pitch deck making during EnB Buzz at IIT Bombay

## School Head Boy

ST. MARY'S ICSE SCHOOL

*St. Mary's ICSE School*

*Feb 2014 - Jan 2015*

- Managed a council of 20 students, responsible for the management of the discipline and 20+ intra and inter-school events
- Represented and won accolades for the school in several inter-school competitions and fests during the tenure

## Relevant Courses

<b>Computer Science</b>	Computer Programming and Utilization, Data Structures and Algorithms, An Introduction to Number Theory and Cryptography, Introduction to Machine Learning, Introduction to Computer Networking, Principles of Concurrent and Parallel Programming, Logic in Computer Science, Digital Image Processing
	<b>Others</b> Calculus, Linear Algebra, Differential Equations, Introduction to Numerical Analysis, Economics, Quantum Mechanics

## Technical Proficiency

<b>Programming</b>	Python, C/C++, HTML5, CSS3, Javascript, MATLAB, Solidity
<b>Development</b>	PyTorch, TensorFlow, Keras, Graphlab Create, Django, Docker, Kubernetes, Angular, Ionic, Node.JS, SQL, Jekyll
<b>Software/Tools</b>	Git, JIRA, Octave, Truffle, Embark, EOSIO, $\text{\LaTeX}$ , AWS, MS Azure, CouchBase, Photoshop, Premiere Pro, Arduino, AutoCAD, SolidWorks, AdvantEdge

## Certifications

Jul 2018	<b>Blockchain Fundamentals Training</b> <a href="#">[View]</a>	<i>Blockchain Semantics</i>
May 2018	<b>Machine Learning Specialization</b> <a href="#">[View]</a>	<i>University of Washington &amp; Coursera</i>
Apr 2018	<b>Certified Marketing Analytics Practitioner</b>	<i>Henry Harvin Education</i>

## Extracurricular Activity

<b>Cultural Activities</b>	<ul style="list-style-type: none"><li>• Conducted 3 solo painting exhibitions featuring 101, 135 and 68 paintings</li><li>• Excelled in Elementary and Intermediate Drawing Grade Examinations with an A Grade</li><li>• Secured International Best Prize at UNICEF's Japan International Painting Competition 2014</li><li>• Completed 3<sup>rd</sup> Year in Hindustani Classical Vocals</li></ul>
	<b>Sports</b> <ul style="list-style-type: none"><li>• Successfully completed one year of Squash under National Sports Organization (NSO)</li><li>• Represented the school in Inter-District Hockey and Table Tennis tournaments</li></ul>
	<b>Miscellaneous</b> <ul style="list-style-type: none"><li>• Won the Vodafone's Faster Smarter Better Challenge 2012 and 2014 in Navi Mumbai</li><li>• Finalist of the personality contest at Cascade 2014, one of the biggest inter-school fests in Mumbai</li><li>• Designed a manually controlled car for XLR8 Competition, capable of negotiating obstacles on a designated track</li><li>• Mentored 5 students for Summer of Science 2019 in areas like cryptography, machine learning &amp; blockchain</li></ul>