

# Arnab Mukherjee

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## EDUCATION

### Bachelor of Technology - Computer Science & Engineering (GPA 8.8/10)

Maulana Abul Kalam Azad University of Technology

Jul 2018 – Jun 2022

Kolkata, West Bengal

## PROFESSIONAL EXPERIENCE

### Research Intern

Indian Institute of Technology Patna

May 2020 – Jan 2022

Patna, India

During my internship, I worked on the following topics:

- Researched the applications of blockchain technology in various industry sectors.
- Tested the application of machine learning to detect vulnerabilities in smart contracts.
- Developed a federated learning architecture for Deep Q Learning agents.
- Designed and developed three smart city platforms based on Hyperledger Fabric and Ethereum.
- Implemented REST APIs using Node.js.
- Drafted frontends for the projects using React JS.

### Full-Stack Web Developer Intern

Insolva Solutions Inc.

Jan 2020 – Apr 2020

Kolkata, India


During my internship as a Full-Stack Web Developer, I worked on the following projects:

- Designed and Developed a company website for an NGO using the LAMP stack.
- Implemented a blogging website for a local business using the MERN stack.

## PROJECTS

### Template Portfolio Website for Researchers

[github.com/mukherjeeearnab/researcher-portfolio](https://github.com/mukherjeeearnab/researcher-portfolio)

- A Template Frontend Project based on React JS, for Researchers or University Professors.
- Demo available at <https://mukherjeeearnab.github.io/researcher-portfolio> 

### Distributed Deep Q Learning

[github.com/mukherjeeearnab/distributed-deep-qnet](https://github.com/mukherjeeearnab/distributed-deep-qnet)

- Implementation of a distributed architecture for Deep Q Learning, based on DownpourSGD.
- Implemented on Python, using PyTorch, Flask, OpenAI Gym, based on a client-server model.

### GoTPE

[github.com/mukherjeeearnab/gotpe](https://github.com/mukherjeeearnab/gotpe)

- Implementation of Threshold Predicate Encryption (TPE) in GoLang.
- A variant of functional encryption, based on the works of Khai Zhou et. al. in IEEE TIFS Vol.: 13.

### Vulnerability Detection of Solidity Smart Contracts

[github.com/mukherjeeearnab/soli-swc](https://github.com/mukherjeeearnab/soli-swc)

- Detection of vulnerabilities using Deep Learning Techniques.
- The DL model, based on LSTM architecture achieved an F-1 score of 97.85% during the tests.

## PUBLICATIONS

### A Unified Blockchain-based Platform for Global e-waste Management

2021

International Journal of Web Information Systems (IJWIS), Volume 17(5): 449-479. Emerald Publishing.

### An Integrated Platform for Vehicle-Related Services and Records Management using Blockchain Technology

Apr 2021

13th Asian Conference on Intelligent Information and Database Systems (ACIIDS '21), Springer CCIS 1371.

## SKILLS

- |                      |              |              |            |
|----------------------|--------------|--------------|------------|
| • HTML5 / CSS3       | • JavaScript | • Node.JS    | • React JS |
| • Python             | • GoLang     | • Tensorflow | • Ethereum |
| • Hyperledger Fabric | • Solidity   | • PostgreSQL | • Docker   |