Arnab Mukherjee

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EDUCATION

Bachelor of Technology - Computer Science & Engineering (GPA 8.8/10) Jul 2018 – Jun 2022
Maulana Abul Kalam Azad University of Technology Kolkata, West Bengal

SKILLS

- HTML5 / CSS3
- JavaScript
- Node.JS
- React JS
- Python
- Solidity
- MongoDB
- PostgreSQL

PROFESSIONAL EXPERIENCE

Research Intern May 2020 – present
Indian Institute of Technology Patna Patna, India
- Researched the applications of blockchain technology in various industry sectors.
- Tested the application of machine learning to detect vulnerabilities in smart contracts.
- Implemented 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 Express and Node.js.
- Drafted frontends for the projects using React JS.

Full-Stack Web Development Intern Jan 2020 – Apr 2020
Insolva Solutions Inc. Kolkata, India
- Designed and Developed a company website for an NGO using the LAMP stack.
- Implemented a blogging website, similar to WordPress for a client using the MERN stack.

PROJECTS

Template Portfolio Website for Researchers
github.com/mukherjeearnab/researcher-portfolio
- Designed and implemented a template portfolio website on React JS, for Researchers or University Professors.
- Demo available at *https://mukherjeearnab.github.io/researcher-portfolio*

Distributed Deep Q Learning
github.com/mukherjeearnab/distributed-deep-qnet
- Implemented a distributed architecture for Deep Q Learning, based on Google's DownpourSGD.
- Implemented the project on Python, using PyTorch, Flask, OpenAI Gym, based on a client-server model.

GoTPE
github.com/mukherjeearnab/gotpe
- Implemented a Go package for Threshold Predicate Encryption (TPE).
- TPE is 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/mukherjeearnab/soli-swc
- Implemented a Deep Learning model to detect vulnerabilities in Solidity smart contracts.
- The LSTM model, implemented on Tensorflow, achieved an F-1 score of 97.85% during the tests.

PUBLICATIONS

Blockchain-Enabled Emergency Detection and Response in Mobile Healthcare System May 2022
IEEE International Conference on Blockchain and Cryptocurrency (ICBC '22), IEEE Press. (Accepted)

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.

PoliceChain: Blockchain-Based Smart Policing System for Smart Cities Nov 2020
13th International Conference on Security of Information and Networks (SIN '20), ACM Press.