MUKUND KALRA

Dhirubhai Ambani Institute of Information and Communication Technology

Email: mukundkalra@gmail.com **DOB:** February 17, 2000

Address: Ludhiana, Punjab

EDUCATION

Degree	University/Institute	Year	CPI/Aggregate
B. Tech. (ICT)	Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT), Gandhinagar, Gujarat	2017-2021	7.47
Intermediate/+2	Bal Bharati Public School, Ludhiana, Punjab - CBSE	2016-2017	84%
High School	Bal Bharati Public School, Ludhiana, Punjab - CBSE	2014-2015	95%

SKILLS

Expertise Area/Area(s) of Interest	Machine Learning, Computer Vision, Web Development, Blockchain, Operating Systems, Data Structures, Algorithms, Databases, Networks.
Programming Language(s)	Python, C, JavaScript, Solidity, Go.
Tools and Technologies	Tensorflow and Keras (ML), Node, Django and Flask, React (Web Dev), Smart Contracts, Truffle and Ganache (Blockchain), Emscripten (WASM)
Technical Elective(s)	Cryptography, NoSQL Databases, Machine Learning, Compiler Design.

PROFESSIONAL EXPERIENCE/INTERNSHIPS

Rural Internship - Incredible Himachal NGO (Society for Social Welfare & Environment) (Dec, 2018 - Jan, 2019)
Conducted field surveys, awareness lectures, farm visits and tree plantations to promote rural development and environment protection. Team Size - 10
Guide: Mr. Niraj GP

Summer Research Internship (May, 2020 - August,2020)
Malware detection research in resource constrained environments e.g IoT and mobile devices. It will be based on researching machine learning and graph-based implementations so as to assemble a low-overhead and efficient malware intrusion detection system. Team Size - 2
Guide: Dr. Maniklal Das

PROJECTS

Crash Detection System (Feb - April, 2019)
Detect crash of a steady vehicle using an aggregate of shock, vibration, ultrasonic sensor and an Arduino Uno. If shock is detected, the system alerts the user. https://github.com/MukundKal/Crash-Detection-System Team Size - 11
Guide: Dr. Rutu Parekh

Minimized Cost (~70%) in Energy Consumption of a Data Center (using Deep Q-Learning) (Jan - Feb, 2020)
AI agent that controls the cooling/heating of the server so that it stays in an optimal range of temperatures while saving the maximum energy, therefore minimizing the costs using Deep-Q Reinforcement Learning (DQ-RL)? for optimization. Simulation Results ~ 70% cost savings. https://github.com/MukundKal/rl-dqn-server-optim

AutoAttendance System (March - May, 2020)
Website (React + Django) and App (React Native) for making the attendance process seamless. It helps minimize number of proxy attendances using cycling QR codes coupled with a Deep Learning system that runs via camera feed to estimate #students present inside the lecture. https://github.com/MukundKal/auto-headcount Team Size - 3

Web Assembly (WASM) (- May 2020 -)
Compiling C to WASM and running it in the browser using Emscripten. The physics calculations speed up significantly when C is directly compiled and run in the browser rather than relying simply on JavaScript for mathematically heavy calculations of speed, bounce and direction.
https://github.com/MukundKal/wasm-canvas

Generating Images using Deep Convolutional GANs (April - May, 2020)
Generative Adversarial Networks can actually generate new images by learning the distribution of the dataset used to train. After training, model was able to generate realistic looking fake images. Team Size - 4

Blockchain Social Network Prototype (July 2020 - Present)
A website where users can create posts and other content and other users can tip their fav. posts and creators with cryptocurrency. The images uploaded are stored on the InterPlanetary File System (IPFS) which is a p2p decentralized system in order to improve robustness.

POSITION OF RESPONSIBILITY

- Coordinator of RoboClash at i'Fest 2018 at DA-IICT. (10/2018)
- Member at Electronics Hobby Club. (EHC) (2018)
- Research Club Member (2019 - Present)

AWARDS AND ACHIEVEMENTS

- Award for Excellent Performance in Scholastics and Co-Scholastics (2016)

INTERESTS AND HOBBIES

- Astronomy
- Cryptography and Blockchain
- Autonomous Robotics
- Fitness