+1 (623) 274-9050 github.com/kashishkhullar
kkhullar7@gmail.com medium.com/@kashishkhullar

KASHISH KHULLAR

EDUCATION

Arizona State University **Tempe, Arizona**
Master of Science in Computer Science (GPA: 4.11/4.00) *Jan 2022 – present*

Maharaja Agrasen Institute of Technology **Delhi, India**
Bachelor of Technology in Computer Science and Engineering (CGPA: 8.56/10.00) *Aug 2015 – May 2019*

WORK EXPERIENCE

Blockchain Research Lab, Arizona State University **Tempe, Arizona**
Graduate Services Assistant *Feb 2022 – Present*

- Developed an NFT Marketplace of Fashion products for Phoenix Fashion Week using Algorand Blockchain
- Wrote smart contracts for product designer authentication and NFT sale with thorough unit testing
- Implemented a workflow to send encrypted design assets along with the NFT to the customer using Pinata's IPFS APIs
- Conducted Smart Contract Internal Audits by implementing best practices and recommended guidelines by Algorand
- Worked on: Algorand, Python, PyTeal, Node.js, Express, Mocha, React, MongoDB, Smart Contract Auditing, Docker

Cypherock **Delhi, India**
C/C++ Developer Intern *May 2021 – Nov 2021*

- Worked on the firmware of the Cypherock X1 Wallet device used for signing Bitcoin and Ethereum transactions
- Improved existing device UI, added new screens/flows/controllers, wrote documentation, and created state diagrams
- Expedited read/write by 30% by implementing Tag-Length-Value storage structure for flash memory management
- Implemented multi packet encryption for large textual data sent from desktop application in the inheritance flow
- Reduced device RAM usage by 80% by adding dynamic communication buffer for desktop communication
- Developed desktop simulator for the device which made development process 4x faster
- Integrated SonarQube with the codebase to generate bug reports and wrote unit test cases for APDU, NFC and Flash module
- Worked on: C, CMake, Makefile, GitLab, LVGL, PlantUML, Unity Test Framework, SonarQube, Figma

Newgen Software Ltd **Uttar Pradesh, India**
Software Engineer *Aug 2019 – Oct 2020*

- Worked on the product suite developed specifically for our client, CMiC (Canada), in the construction management domain
- Resolved client reported issues in Document Manager application used for creating/updating/sending RFIs, submittals, transmittals with their attached documents in Image, Text, Doc, or PDF format
- Integrated the CMiC BIM application with Autodesk BIM 360 for managing 3D models using Autodesk REST APIs
- Developed push notification manager for iOS devices for CMiC eXpense app
- Worked on: Java, JDeveloper 11g/12c, Oracle DB, PL/SQL, MongoDB, Struts, Jersey, JavaScript, JQuery, OAuth 2.0

PROJECTS

Application of AI algorithms using TurtleBot *Jan 2022*

- Implemented BFS, DFS, GBFS, A* search algorithms to find the shortest route**,** used PDDL to find optimal plan in given domains and implemented Q Learning to learn best actions to reach the goal state and plotted their performance
- Technologies Used: Python, PDDL, Gazebo, ROS, Matplotlib

Employee Attrition Prediction *Mar 2022*

- Implemented machine learning models to predict employee attrition using IBM HR Analytics dataset
- Performed data visualization, data imputation, feature selection, feature & label encoding, dimensionality reduction
- Implemented SVC, Logistic Regression, KNN, Gaussian Naïve Bayes, Random Forest, XG Boost, MLP and Neural Network models using Grid Search Cross Validation with best score of 89% for NN using optimal threshold for classification
- Technologies Used: Python, Sklearn, Keras, Pandas, Seaborn, Matplotlib, Google Colab

Decentralized Flying Ad Hoc Networks *Sep 2018*

- Simulated the working of decentralized FANETs using Practical Byzantine Fault Tolerance as consensus algorithm
- Collected data on throughput, latency and message overload and represented the nodes graphically
- Technologies Used: Node.js, Vis.js, Express, Postman, Shell Script

PUBLICATIONS

Articles

- Implementing Merkel Tree and Patricia Trie, *Coinmonks*, 2020 **[Link]**
- Implementing PBFT in blockchain, *Coinmonks*, 2019 **[Link]**
- Implementing Proof of Stake Part 1 – 6, *Coinmonks*, 2019 **[Link]**
- Implementing blockchain and cryptocurrency with Proof of Work Part 1 – 9, *Coinmonks*, 2018 **[Link]**

Papers

- **K. Khullar**, Y. Malhotra, A. Kumar, **Decentralized and Secure Communication Architecture for FANETs using Blockchain**, *Procedia Computer Science*. 173 (2020) 158-170. **doi**: 10.1016/j.procs.2020.06.020
- M. Sharma, A. Raina, **K. Khullar**, H. Khandelwal, S. Mehrotra, **Scalable Machine Learning in C++ (CAMEL)**, *Advances in Intelligent Systems and Computing.* (2020) 1063-1081. **doi**: 10.1007/978-981-15-5148-2_91

SKILLS

Languages – C, C++, Node.js, Python, Java, TypeScript, Solidity
Database – MongoDB, Oracle PL/SQL, Redis, DynamoDB
Web – Express, React, Angular, JQuery, Tailwind, GraphQL
Tools – Git, CI/CD, Docker, AWS, Firebase, Postman