KALPAN MUKHERJEE

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EDUCATION

Nitte Meenakshi Institute of Technology, Bangalore   *2017 - 2021(Expected)*
Bachelor of Technology in the Department of Information Science and Engineering
CGPA: 9.16
H.A.L. Public School, Bangalore   *2017*
CBSE: 93%(Science)
St. Francis' College, Lucknow   *2015*
ICSE: 92%(Science)

EXPERIENCE

Research Intern @ *Centre for Robotics Research, NMIT*   *October, 2018-May, 2020 (1y 8 months)*
- Led research on the effectiveness of Video Shot Detection by comparing texture features like GLCM, LAWs and Texture Spectrum v/s intensity domain in videos of good and poor illumination
- Explored video summarisation using clustering techniques for producing short insightful summaries of large video files
- Used OpenCV and C++ to perform image/video segmentation and summarisation of activity detection for intruder alert using auto-thresholding algorithms
Technologies worked on - OpenCV, Thresholding, Filters, Textures, Feature Detectors

Software Engineering Intern @ *Unisys Corporation*   *October, 2019 - March, 2020 (6 months)*
- Built an app on React-Native for Indian Railways introducing ease of access to information pertaining to travel time and delays encountered
- Used designs provided on Figma to render exact UI
Technologies worked on - React Native(Expo)

Software Engineering Intern @ *Creatist*   *May, 2020 - July, 2020 (2 months)*
- Wrote production level code for Android and iOS application for educational platform for teachers and students to upload videos, answer questions and include real-time live updates
- Optimised and integrated multiple APIs for a seamless user experience
Technologies worked on - React Native(CLI), Firebase, API integration

HACKATHON PROJECTS

ShowMeDaWae - A new routing map with road conditions @ *VVCE, Mysore*
TensorFlow with Keras, Google Maps API, React-Native — Github — Youtube   *March, 2020*
Trained model to detect road conditions through accelerometer sensor data from a user's phone. This is used to map future routes and classify them good/average/bad.

DataMagic - Democratising Data Analytics for Small Businesses @ *NMIT, Bangalore*
TensorFlow with Keras, React — Github — Youtube   *March, 2020*
Designed a simple and intuitive web platform for small businesses to upload monthly sales data onto and get predictions and visualisations for future sales.

Electro Maps - Predicting electricity outrage @ *IIT, Dharwad*
TensorFlow with Keras, NodeJS — Github — Medium(Blog)   *February, 2020*
Scrapped past planned electricity outage data from BESCOM and BBMP combined with weather and population data to train a model to predict future outage in a web portal.

OTHER PROJECTS

Handwriting Digitisation - Digitising classroom teaching
Arduino, Python, Google Cloud — Youtube — Github   *August - October, 2019 (3 months)*
Used multiple arduino micro controllers fixed at adjacent ends of a blackboard to capture writing on it. This is then processed using a custom smoothing algorithm and uploaded to the cloud automatically.

Namma College - A college forum
Android(Flutter, Dart), Firebase — Github   *January - April, 2019 (4 months)*
Created android app to enable students to post queries and get answers from staff and other students. Front-end made with Flutter framework using Dart and back-end with Google Firebase(User Authentication, Database).

Jen - Smart Chatbot
C++, Datafiles — Github   *August -December 2016 (5 months)*
Created a chatbot called Jen in C++ that makes out particular words in the users input and answers accordingly to adjust for grammatical variations from the different users.

SKILLS ACHIEVEMENTS

Achievements - Winner at Onload 2.0(36 hour hackathon held at VVCE, Mysore), Winner at Inspark-2019(Yearly development competition held at NMIT, Bangalore), Finalist at DevHack 2.0(36 hour hackathon held at IIT-Dharwad)

Blog Posts - *Predicting Electricity Outage with Keras and Python*, *Auto start apps and fix them to workspaces on startup Ubuntu,* Deep dive into C++ STLs - *unordered map, vectors*

Certification - Neural Networks and Deep Learning(*Coursera*), Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization(*Coursera*), Python(*NPTEL*)

Technical Skills - Machine Learning, Python, C++, Android Development, Git

Frameworks - Tensor Flow, Scikit Learn, Numpy, OpenCV, Firebase

Relevant Courses - Data Structures, Analysis and Design of Algorithms, Object Oriented Programming, Digital Image Processing

Clubs - Research Lead at *Pursuit of 42(AI/ML club of NMIT)*, Member of *Hack Club, NMIT*