Md. Aminul Islam

Email : aminul7506@gmail.com   Github : https://github.com/aminul7506
Website : https://aminul7506.github.io   LinkedIn, Skype

RESEARCH INTERESTS

- Software Engineering
- Computer Vision
- Natural Language Processing

EDUCATION

B.Sc. in Computer Science and Engineering   Jul. 2014 to Oct. 2018
Bangladesh University of Engineering and Technology(BUET), Dhaka, Bangladesh
CGPA : 3.57/4.0 (Major : 3.6/4.0, Last 3 terms(58 credits) : 3.85/4.0)

RESEARCH EXPERIENCE

Scene Reconstruction From Multiple Static CCTV Cameras   Nov. 2017 to Oct. 2018
We have introduced and developed a system that can present information of a human or an object to user by analyzing videos taken from multiple sequential or partially overlapping static CCTV cameras from area of interests and also developed a movement prediction algorithm for predicting the movement of the input object in the place of defective or unavailable cameras inside the area of interests using object's velocities in different cameras. Thesis Book
Supervisor : Dr. Md. Monirul Islam Collaborator : Anwar Hossain
Tools : MATLAB, SURF(Speeded Up Robust Features), Object Detection & Tracking Algorithm, Image Segmentation, Image Matting, Polyfit

- worked for recognizing, tracking and indicating the input object in different cameras and determining its velocities in different cameras
- developed movement prediction algorithm using the input object's velocities in different cameras and showing predicted movement in the place of missing cameras

WORK EXPERIENCE

Software Engineer, Ridmik Labs, Dhaka, Bangladesh   Nov. 2018 to present

1. **RidmikChat** : RidmikChat is an XMPP(Extensible Messaging and Presence Protocol) based secured messaging and social platform application for android.
   Tools : XMPP, Signal Protocol, ejabberd(XMPP server), AES encryption and decryption, Android Studio, Java, Kotlin, SQLite
   - developed XMPP based one to one and group messaging, end-to-end encrypted messaging in client side and different security issues to protect user app data in android device
   - working in the continuous development of the app especially in the messaging part

2. **Bangla Article Summarizer(Research Project) :** Bangla article summarizer outputs an extractive Bangla summary of a given Bangla news article which is currently being used to generate automated Bangla summary of news articles for a news app in Ridmik.
   Tools : Python, NLTK, K-means Clustering Algorithm, our prepared Bangla Words Dataset, TF, TF-IDF, Sentence Ranking, Bangla Stemmer, Bangla Punctuation and Stop Words
   - contributed for finding methodologies to construct an extractive Bangla article summarizer and developed Bangla article summarizer through sentence scoring using two methods(TF, TF-IDF) and mentioned tools and also evaluated performance on different news articles for each method

3. **Boitoi(Android) :** Boitoi is a secured android eBook reader and short story reader and editor with in-App book store.
   Tools : Android Studio, Java, Kotlin, Java Native Interface, C, SQL, JavaScript, HTML, CSS, XML, AES/CBC decryption, ReadiumSDK
   - developed secured eBook reader with in-App book store, short story reader and editor, many more functionalities and working as one of a programming advisors for the continuous development
   - contributed to research on how books will be encrypted in server and decrypted in a specific user's android device using user device unique info

4. **Boitoi(iOS) :** Boitoi is a secured iOS eBook reader with in-App book store.
   Tools : Xcode, Swift, Objective-C, C++, JavaScript, HTML, CSS, GRDB, StoryBoard, AES/CBC decryption, ReadiumSDK, iOS keychain
   - worked for the whole development of secured eBook reader with in-app book store
   - contributed to research on how books will be encrypted in server and decrypted in a specific user's iOS device using iOS keychain
5. **Ridmik Keyboard :** Ridmik Keyboard is a popular android keyboard in Bangladesh with Bangla phonetic keyboard, English and Arabic layout.
   Tools : Android Studio, Java, Kotlin, C, Java Native Interface
   - fixed some bugs, worked on design changes, and implemented some new features
6. **Ridmik Account Kit Library :** User can login to any Ridmik app in andorid or iOS devices using a single Ridmik account through this library.
   Tools : Android Studio, Java, XML, Xcode, Swift, StoryBoard, iOS Keychain
   - developed inter-app authentication and login screens for both android and iOS

Programmer of AIST Project, Department of CSE, BUET   May 1, 2021 - July 31, 2021
1. **AIST Project :** AIST Project is a web application for users to explore the predictions of AIST (An Interpretable Attention-based Deep Learning Model for Crime Prediction) model(preprint) and analyse the predicted and actual crime info on different locations and regions.
   Tools : Django, Python, SQLite, HTML, CSS, Javascript, jQuery, REST API, tkinter
   - developed backend, REST API, frontend and an admin panel for uploading crime data in server predicted by AIST model

ACADEMIC PROJECTS (SELECTED)

1. **Stay Safe(Android App)**   Apr. 2017 to Jun. 2017
Users can report for crimes in police station, connect with nearby police station or friends in emergency, get notification alert, see verified crimes in an area and police can see reported crimes, connect with victims and verify crimes, make an area as danger prone. Code
Tools : Android Studio, Java, Firebase, Google Map API, SQLite, Push Notification
2. **Multivariate Stock Price Prediction**   Jul. 2018 to Aug. 2018
A model is trained using LSTM on multiple attributes of share market data which can predict the starting price for next day share market. Code
Tools : Python, Keras, Tensorflow, LSTM(Long Short Term Memory), one year share market data for training
3. **Online Examination(Web)**   Nov. 2016 to Dec. 2016
Students can give exams and see marks on both MCQ and descriptive questions, teachers can upload questions from admin panel and can check descriptive answers. Code
Tools : Oracle, JSP Servlet, Java, HTML, CSS

More Projects (Other Academic and Independent Projects)

SELECTED COURSEWORK

- Artificial Intelligence
- Machine Learning
- Digital Image Processing
- Pattern Recognition
- Software Engineering & Information System Design
- Operating System
- Computer Graphics

SKILLS

Programming Languages : Java, Python, Swift, C, C++, Kotlin, Objective-C, Assembly(80X86)
Scripting Languages : JavaScript, HTML, CSS, MATLAB, Shell Scripts
Mobile Application Development : Android, iOS
Framework : Django
Database : Oracle, SQL
Tools & Others : Keras, Tensorflow, NLTK, Google Map API, Google Vision API, Firebase, JNI(Java Native Interface), JavaFX, LaTeX, tkinter