

Md. Aminul Islam

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RESEARCH INTERESTS

- Software Engineering
- Computer Vision
- Machine Learning
- 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 on recognizing, tracking and indicating the input object in different cameras and determining its velocities in different cameras
- worked on developing movement prediction algorithm and showing predicted movement in the place of missing cameras using the input object's velocities in different cameras

WORK EXPERIENCE

Software Engineer, Ridmik Labs, Dhaka, Bangladesh Nov. 2018 to present
Ridmik+ : Ridmik+ 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, Android Studio, Java, Kotlin, SQLite

- worked on developing XMPP based one to one and group messaging, end-to-end encrypted messaging in client side and different security issues to protect user data in android device
- working in the continuous development of the app specially in the messaging part

Bangla Article Summarizer(Research Project) : Bangla article summarizer outputs an extractive Bangla summary of a given Bangla news article.
Tools : Python, NLTK, K-means Clustering Algorithm, our prepared Bangla Words Dataset, TF, TF-IDF, Sentence Ranking, Bangla Stemmer, Bangla Punctuation and Stop Words

- worked on finding methodologies to construct an extractive Bangla article summarizer and developing Bangla article summarizer using two methods(TF, TF-IDF) and mentioned tools and also evaluated performance on different news articles for each method

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, RadiumSDK

- worked for developing 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
- made research on how books will be encrypted in server and decrypted in a specific user's android device using user device unique info

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, RadiumSDK, iOS keychain

- worked on the whole development of secured eBook reader with in-app book store
- made research on how books will be encrypted in server and decrypted in a specific user's iOS device using iOS keychain

Ridmik Keyboard : Ridmik Keyboard is the most popular android keyboard in Bangladesh with Bangla phonetic keyboard, English and Arabic layout.

Tools : Android Studio, Java, Kotlin, C, Java Native Interface

- worked on fixing some bugs, design changes, and implementing some new features

Ridmik Account Kit Library : Ridmik Account Kit is a library for android and iOS which is used to login to any Ridmik application using a single Ridmik account.

Tools : Android Studio, Java, XML, Xcode, Swift, StoryBoard, iOS Keychain

- worked on developing inter-app authentication and login screens for both android and iOS application

Programmer of AIST Project, Department of CSE, BUET May 1, 2021 - July 31, 2021

AIST Demo Project is a web application for demonstrating real life application of **AIST** (An Interpretable Attention-based Deep Learning Model for Crime Prediction) paper(preprint). The website shows predicted crimes info and some indexes of crime dynamics predicted by AIST model in a given location.

Tools : Django, Python, SQLite, HTML, CSS, Javascript, jQuery, REST API, tkinter

- worked on developing backend, REST API, frontend and an admin panel for uploading crime data in server on which AIST model will be trained

ACADEMIC PROJECTS (SELECTED)

Stay Safe

Apr. 2017 to Jun. 2017

It is an android application from where 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

Multivariate Stock Price Prediction

Jul. 2018 to Aug. 2018

It can predict the starting price for next day share market from a model which is trained using LSTM on multiple attributes of share market data. [Code](#)

Tools : Python, Keras, Tensorflow, LSTM(Long Short Term Memory), one year share market data for training

Online Examination

Nov. 2016 to Dec. 2016

It is a web application from which students can give exams on both MCQ and descriptive questions, teachers can upload questions from admin panel, check descriptive answers. [Code](#)

Tools : JSP Servlet, Java, Oracle, HTML, CSS

[More Projects](#)(Other Academic and Independent Projects)

SELECTED COURSEWORK

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

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, L^AT_EX, tkinter