

## Md Aminul Islam

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LinkedIn, Skype

### RESEARCH INTERESTS

- Software Engineering and Security
- Natural Language Processing
- Computer Vision

### 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 software system that can detect and track of a human or an object and show it 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 and showing the movement of the input object in the place of defective or unavailable camera inside the area of interests using object's movement velocities in different cameras and missing time. [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 a movement prediction algorithm using the input object's velocities in different cameras and missing time duration and showing predicted movement in the place of missing camera

### 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, different security issues to protect sensitive user app data in android device, and some other features
  - 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 [Ridmik News](#) app.  
Tools : Python, NLTK, K-means Clustering Algorithm, our prepared Bangla Words Dataset with Parts of Speech Tagger, TF, TF-IDF, Sentence Ranking, Bangla Stemmer, Bangla Punctuation and Stop Words
  - contributed for finding and implementing methodologies to construct an extractive 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 with varying number of clusters
3. **Boitai(Android)** : [Boitai](#) 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
  - developed secured eBook reader with in-App book store, short story reader and editor, many other features 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. **Boitai(iOS) :** [Boitai](#) 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 for the whole development of secured eBook reader with in-app book store and all other features
    - 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 bugs, worked on design improvement, and implemented some new features
  6. **Ridmik Account Kit Library :** User can login to any Ridmik app in android or iOS devices using a single Ridmik account through this library.  
Tools : Android Studio, Java, XML, Xcode, Swift, StoryBoard, iOS Keychain
    - developed secured inter-app authentication and login 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.  
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.  
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 & Frameworks :** Android, iOS, Django  
**Database :** Oracle, SQL  
**Tools & Others :** Keras, Tensorflow, NLTK, Google Map API, Google Vision API, Firebase, AES encryption and decryption, JNI(Java Native Interface), JavaFX,  $\LaTeX$ , tkinter