Sabbir Ahmed Saqlain

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Education

New Jersey Institute of Technology (NJIT) **Jan 2023 – Dec 2025**
Newark, NJ, USA
Master of Science (PhD Dropout) in Computer Science (GPA: 3.92/4.0)
Thesis: Cloud Data Security, Advanced Machine Learning and Blockchain
Coursework: Data Structures and Algorithms, Cryptography, Big Data,
Machine Learning, Advanced Machine Learning, Trusted Computing & Architecture

Rajshahi University of Engineering and Technology (RUET) **Jan 2015 – Aug 2019**
Rajshahi, Bangladesh
Bachelor of Science in Computer Science and Engineering (GPA: 3.48/4.0)
Coursework: Computer Security, Data Structures and Algorithms,
Data Mining, Neural Networks, Database Systems, Software Engineering

Experience

New Jersey Institute of Technology (NJIT) **Jan 2023 – Dec 2025**
Graduate Teaching Assistant
- Led weekly recitation/lab sections, clarified lecture concepts
- Supported students with problem solving and coding/debugging
- Held office hours and provided timely feedback by grading assignments, projects, quizzes/exams using clear rubrics
- Assisted the instructor with course logistics, managed the LMS (posting materials, announcements, and grades), and responded to student questions promptly

Optimizely — Software Engineer II (iOS) **Sep 2022 – Dec 2022**
- Delivered a B2B commerce mobile application
- Collaborated with analysts to ensure compliance and secure architecture
- **Tech Stack:** iOS, Xamarin, C#.

UAPY – UCB Fintech Company Ltd.— Software Engineer (iOS) **Jul 2021 – Aug 2022**
- Developed a financial services app (1M+ active customers) with strong authentication and secure payment protocols
- Integrating ML-based face detection
- Implemented cryptographic data protection mechanisms to secure user transactions

Brain Station 23 — Associate Software Engineer (iOS) **Sep 2019 – Jul 2021**
Citytouch (The City Bank Limited)
- Refactored code with enhanced encryption for secure transactions
- Rewriting ~40% of Objective-C codebase to improve stability and scalability

UNET Enterprise Banking (UCBL)
- Enterprise banking solution for corporate clients
- Implementing secure transaction flows and backend with secure REST API integration

UCB UNET (UCBL)
- Developed a retail banking app integrating custom secure authentication modules
- Custom design pattern for efficient UI/UX performance

AB Direct Internet Banking (AB Bank)
- iOS app in Objective-C using the MVVM design pattern
- Secure REST APIs for backend connectivity

Modhumoti Digital Banking
- MVVM design with XIB-based custom UI components
- Secure REST APIs for real-time account services

Tech Stack: Swift, Objective-C, MVVM/MVVM-C, REST APIs, WebRTC, WebSocket

Other Projects (iOS App in App store, Team Lead)

AI Text Recognizer **Jan 2022 – Ongoing**
- Built an iOS app for real-time handwriting/printed text OCR using Vision/CoreML
- Supports multi-language recognition and quick export
- Published and maintained on the Apple App Store

Smart Tutor - AI Powered Learn **Jan 2024 – Ongoing**
- Smart Tutor is an AI-based study app for instant homework help.
- It solves math, science, and writing problems with step-by-step answers.
- Users can scan questions and generate quizzes instantly.

AI Art: Artify Image & Video **Jan 2024 – Ongoing**
- AI Artify is an AI-powered image and video generation app.
- Users can create artwork, enhance photos, and transform videos with custom styles.

BreakGame: Block Brick Break **Jan 2022 – Ongoing**
- BreakGame is a fast-paced brick-breaker arcade game for iOS.
- Players control a paddle to destroy blocks across progressive levels.
- The game features power-ups, increasing difficulty, and smooth physics.

Kids Math Example Practice **Jan 2022 – Ongoing**
- Kids Math is an educational app helping children practice basic arithmetic.
- It offers addition, subtraction, multiplication, and division exercises.
- The app generates unlimited examples with playful, kid-friendly visuals.
- Designed to build confidence and improve early math skills.

BrainGrid: Puzzle Challenge **Jan 2024 – Ongoing**
- BrainGrid is a logic-based puzzle game that challenges players with grid-solving tasks.
- It features progressively harder levels designed to boost reasoning skills.
- Players connect patterns, solve sequences, and complete brain-training challenges.

Research Projects

Predicting ED Patient Outcomes (MIMIC-IV ED) | NJIT **Jan 2024 – Dec 2024**
- Built an end-to-end ML pipeline to predict ED patient mortality using MIMIC-IV data
- Performed data cleaning, feature engineering, and cohort clustering (PCA + K-Means)
- Trained and benchmarked classifiers; selected Random Forest achieving ~97% accuracy

- Addressed class imbalance with SMOTE and used SHAP for model interpretability
- Provided insights to support early-risk triage and clinical decision making.

Retrieval-Augmented Generation (RAG) System **Dec 2025**
- Built a local RAG pipeline using Ollama + Llama 3.1 (8B) with FAISS vector search
- Implemented PDF/TXT/MD ingestion, text chunking, and semantic retrieval with nomic-embed-text embeddings
- Developed a FastAPI service for context-aware question answering using retrieved document

Blockchain Based Access Control System | NJIT **Jan 2023 – Dec 2025**
- Designed a hybrid blockchain–cloud storage architecture for supply chain data
- Implemented decentralized access control with real-time revocation
- Enhanced scalability for ML-driven analytics over encrypted datasets
- Tools: Ethereum, Hyperledger Fabric, MySQL, Docker, AWS

Malicious Android Application Detection **IEEE 2019**
- Published an IEEE paper on efficient detection of malicious Android applications using
- Classification algorithms to analyze permission patterns and app behaviors
- Improved detection accuracy and explainability of model predictions.
- Tech: Python, Scikit-learn, Pandas, Android API

Live Face Detection Library **Aug 2022**
- Developed a live face detection module for customer registration using CoreML
- Collected and labeled a custom dataset to train an on-device CoreML model
- Trained and optimized the model for real-time performance and accuracy
- Integrated the trained model into an iOS application for seamless user verification during registration

Skills

- AI & ML: Supervised Learning, Deep Learning, Model Optimization, CoreML, TensorFlow Lite, Scikit-learn
- Cryptography: Symmetric/Asymmetric Encryption, Key Management, Access Control, Secure Multi-Party Computation, Cloud Security, Authentication Protocols, Mobile Security
- Programming: C/C++, Python, Go, Swift, Objective-C
- Blockchain & Distributed Systems: Ethereum, Hyperledger Fabric, Consensus Protocols
- Tools: GitHub, GitLab, Docker, AWS, Agile/Scrum

Others

Research Publication: IEEE- Malicious Android Application Detection Using ML **Aug 2019**
Internship: Microsoft Young Bangla **Apr 2018(3 Days)**
Hobbies: Cybersecurity research, Capture the Flag (CTF) challenges