



Shifat Solaiman

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Education

CHITTAGONG UNIVERSITY OF ENGINEERING AND TECHNOLOGY (CUET), Feb 2017 – July 2022
B.SC. IN COMPUTER SCIENCE & ENGINEERING

- GPA: 3.55/4.0  **WES Evaluated**
- **Merit Position:** 21st out of 131 students  **Transcript**

Work Experience

Software Engineer, Samsung – Dhaka, Bangladesh October 2022 – Present

- Developed and maintained Controller and Utility applications for Samsung Galaxy Watch using Java, Kotlin, and Wear OS SDK, improving functionality and user experience.
- Led end-to-end development of the WatchSiren application for the Samsung Galaxy Watch Ultra, successfully delivering the project within 2 months under a highly compressed timeline.
- Collaborated with cross-functional teams at Samsung Headquarters (South Korea) and Samsung R&D Institute (India) to design and implement new features for wearable devices.
- Optimized application launch performance by 42% (from 1200ms to 700ms), resulting in reduced latency and enhanced user experience.
- Ideated, prototyped, and delivered 3 functional Proofs of Concept (PoCs) incorporating machine learning for Samsung Galaxy Phones and Wearables.
- Researched, developed, and integrated machine learning algorithms to enhance device connectivity and seamless user experience.
- Identified, analyzed, and resolved critical software bugs, ensuring 100% crash-free stability in Controller and Utility apps across pre-market and post-release phases.
- Authored UML design documentation (class and sequence diagrams) used by 10+ engineers to support scalable development of applications such as Flashlight, Siren, and Compass.

Intern, New Technology Systems Limited – Chattogram, Bangladesh Feb 2022

- Practical experience working with Oracle databases.
- Acquired in-depth knowledge of SQL.


Research Experience

Under Graduate Thesis Work:

Blockchain Enabled Healthcare System Using InterPlanetary File System  **Code**  **Report**

- Built a decentralized healthcare application using **Solidity (Ethereum)**, **IPFS**, **React.js**, and **Node.js** to ensure secure data sharing.
- Designed smart contracts for transparent, tamper-resistant patient–doctor interactions and integrated distributed storage for medical records.

Notable Projects

Automated Hyperparameter Optimization of Convolutional Neural Networks  **Code**
using **Optuna**

- Designed and implemented an automatic hyperparameter search framework using **Optuna** to optimize architectures and training hyperparameters (learning rate, dropout, number of filters) for CNNs, achieving improved validation accuracy and reduced tuning time.
- **Tools Used:** Python, PyTorch / TensorFlow, Optuna, NumPy, Pandas

Fine-Tuning Deep Convolutional Features via VGG16 for Efficient Image Recognition

 Code

- Fine-tuned the pre-trained **VGG16** network on domain-specific datasets, adjusting top layers and applying transfer learning to increase classification accuracy under limited data settings.
- Experimented with learning rates, regularization, and layer freezing to improve fine-tuning performance.
- **Tools Used:** Python, Keras / TensorFlow, OpenCV, scikit-learn

Deep Learning Based Object Localization using OpenCV & CNNs

 Code

- Developed a pipeline for object localization by combining CNN-based detection with OpenCV for bounding-box extraction and post-processing.
- Evaluated CNN architectures and optimized for accuracy vs inference speed.
- **Tools Used:** Python, OpenCV, TensorFlow / PyTorch, scikit-image

Action Detection from Video

 Code

- Implemented video-based action detection using CNN feature extraction and LSTM temporal modeling to detect and label human actions in video streams.
- Addressed challenges such as varying video lengths and class imbalance during training.
- **Tools Used:** Python, OpenCV, PyTorch

Sentiment Analysis with BERT

 Code

- Fine-tuned BERT for sentiment classification on text datasets, achieving good performance across accuracy and F1-score metrics.
- Experimented with learning rates, batch sizes, and applied data augmentation to mitigate class imbalance.
- **Tools Used:** Python, HuggingFace Transformers, PyTorch, Pandas

PDF Reader Agent

 Code

- Built an intelligent agent that parses PDF documents (text, tables, images) and answers user queries by extracting and summarizing content.
- Developed a simple interactive interface using **Streamlit**.
- **Tools Used:** Python, LangChain, PyPDF2, Streamlit

Next Word Predictor

 Code

- Developed a predictive text model using **RNN (LSTM)** that suggests the next word given a sequence, evaluated with perplexity and top-k accuracy.
- Experimented with embeddings, smoothing, and context length to improve prediction quality.
- **Tools Used:** Python, TensorFlow/Keras, NumPy

Deep Convolutional GAN (dcGAN)


 Code

- Implemented **dcGAN** for image generation tasks, training generator and discriminator networks with alternating optimization.
- Experimented with normalization, activation functions, and stabilization techniques to improve image realism.
- **Tools Used:** Python, TensorFlow/Keras, NumPy, Matplotlib

Healthcare App (Blockchain)

 Code

- Built a decentralized healthcare web app using **Solidity (Ethereum)** and **IPFS** for secure, tamper-proof medical record storage and sharing.
- Developed a **React.js frontend** with Web3 wallet integration (MetaMask) for smart contract interaction; deployed demo on Netlify.
- **Tools Used:** Solidity, Ethereum (testnet), React.js, JavaScript, IPFS, Node.js, Web3/Ethers, Netlify

For the complete list of my projects, please visit my  GitHub profile.

Skills

Languages: Java • Kotlin • Python • JavaScript • C/C++ • Dart

Frameworks & Libraries: Scikit-learn • TensorFlow • PyTorch • React • Node.js • Express • Flutter

Tools & Technologies: Git/GitHub • AWS • MySQL • MongoDB

Certifications

Machine Learning	Certificate
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- Learned the fundamental ideas of Hypothesis, Cost Function, and Gradient Descent.

Neural Networks and Deep Learning	Certificate
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- Implemented ANN from scratch, including the entire Backpropagation process.

Improving Deep Neural Networks: Hyperparameter Tuning	Certificate
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- Learned different scenarios in deep learning projects and logical steps to take.

Convolutional Neural Networks	Certificate
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- Learned basic structures of CNN and implemented Object Detection from scratch.

Standardized Tests

- IELTS - 6.5
- GRE - 305 (Quant: 160)

Awards & Scholarships

- **Excellence Award** - Samsung Research and Development Institute (2024)
- **Passed Advanced Machine Learning Test** - Samsung Research and Development Institute (2025)
- **Academic Scholarship** - Awarded for ranking in the top 20% of students in each semester at Chittagong University of Engineering and Technology (CUET)
- **Government Scholarship** - SSC (2014) and HSC (2016)

Leadership & Extracurricular Activities

- **Programming Coordinator** - CUET Computer Club
- **Finance Secretary** - Joyoddhoney, CUET
- **Finance Secretary** - Chittagong Students Forum
- **Volunteer** - National Collegiate Programming Contest (NCPC), CUET (2017)