

# FABIHA AFROSE REDITA

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## SKILLS

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- Programming Language: C++ (Advance), Python (Advance)
- Database Management System: MySQL
- Problem Solving: Around 3+ years of experience of problem solving in C++, solved 300+ problems all together
- Tools and others: Visual Studio, Google Colab, Jupyter Notebook, OpenGL, git and github
- Mathematical Proficiency: Linear Algebra, Statistics, Probability, Fourier Mathematics

## PROJECTS

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### Leukemia Classification:

- Classifying blood smear images into five leukemia subtypes with 91% accuracy.
- Designed and implemented a deep learning pipeline using different image processing methods with transfer learning (EfficientNetB7)
- **Technology: Python, TensorFlow, Scikit-learn, OpenCV, NumPy, Streamlit, Google Colab, Matplotlib**

### Black-Jack Advance:

- **Level 1:** Built with pygame, it features AI opponents, scoring mechanics, and game state management.
- **Level 2:** Created using tkinter, it includes level progression, image-based cards, and a status bar, with seamless transitions between the two game modes.
- **Technology: Python, Pygame, Tkinter, PIL (Pillow), Fuzzy Logic (fl module), OS module**

### Digital Image Processing:

- Implemented various noise cancellation filters, including Gaussian, Median, Mean, Bilateral, Sobel, and Adaptive filters, to enhance image quality.)
- Utilized Fourier Transform for frequency domain analysis and applied a Gaussian low-pass filter to remove high-frequency noise.
- Developed a system to visualize image histograms for contrast enhancement and applied notch filtering to suppress specific frequency components
- Applied phase and magnitude spectrum manipulation techniques to reconstruct images with minimal loss using inverse Fourier transform
- Implemented image transformation techniques using OpenCV and NumPy, ensuring optimized performance for real-time processing

## WORK EXPERIENCE:

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### Spectrum Software & Consulting Ltd

#### Software Engineer - Intern

- Developing a new DSL (Domain Specific Language) for generating business flow chart from scratch
- ANTLR (for lexer and parser generation in JAVA), creating AST (JAVA), Using Tree data structure (JAVA) for parent-child relationship to inherit the properties (color, size, position)
- Concept: Object Oriented programming, Data Structure and Algorithm, Compiler Design

## ONLINE JUDGE ID

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- [Codeforces handle](#): Solved 210+ problems on Codeforces, attempted 247 problems, Max Rating – 1361
- Leetcode handle: [Fabiha Afrose](#)

## EDUCATION

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### Khulna University of Engineering & Technology (KUET)

2019 – 2024

*Bachelor in Computer Science and Engineering*

## ACHIEVEMENTS

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### Dean's Award (KUET)

2019 – 2020

*Attaining CGPA-3.75 or above on 2019-2020 session*