# Shahidul Islam

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## PROFILE

I am **Shahidul Islam,** a **final-year Textile Engineering student** passionate about **programming, data science, and machine learning**. Proficient  in **C, C++, and Python**, I have worked on **open-source projects** and conducted research on **Automated Fabric Fault Detection using Python and OpenCV**. I enjoy **solving real-world problems** and actively improve my **DSA skills** through **LeetCode**.As a recipient of the **NASA Open Science Badge**, I am committed to **open science, reproducible research, and data-driven innovation**. My experience with **image processing, machine learning, and open-source contributions** aligns with space-related projects, making me eager to contribute to cutting-edge research and technology.

## SKILLS

**Programming Languages:** Python, C, C++,  JavaScript
**Data Science & Machine Learning:** Data Analysis, Machine Learning Algorithms, scikit-learn, TensorFlow
**Computer Vision & Image Processing**: OpenCV, Image Segmentation, Object Detection
**Data Visualization:** Matplotlib, Seaborn, PowerBI
**IDE/Development Tools:** HTML, CSS, Git, GitHub, VS Code, PyCharm, Jupyter Notebook Code::Blocks
**Other:** Data Structures & Algorithms, NumPy, Pandas, SunPy,  SQL, Statistical Analysis

## EDUCATION

**Bachelor of Science in Textile Engineering**
Barishal Textile Engineering College, Bangladesh (Affiliated with Bangladesh University of Textiles)
**Expected Graduation: May in 2026**
**Relevant Coursework**: Computer Programming (C/C++), Statistics,  Automation and Control Engineering, Fundamentals of Electrical and Electronics Engineering, Fundamentals of Mechanical Engineering, Fabric Engineering and Design, Textile Physics

## PROJECT

### Automated Fabric Fault Detection Using Python and OpenCV
Developed a machine vision system for fabric fault detection, identifying defects like holes, stains, and vertical defects. Achieved 85.29% accuracy with **SVM** and 87.06% with **Random Forest** models.
Applied edge detection, color segmentation, texture analysis techniques using **OpenCV** and **Python**.
Contributed to automating fabric quality control, improving detection speed and accuracy.

## EXPERIENCE

- **Open Source Contributions**
  Contributed to various **open-source projects** across multiple platforms, focusing on **bug fixes**, **documentation improvements**, and **code optimization**.
  Actively participated in the open-source community to **troubleshoot**, **debug**, and enhance **functionality and user experience**.
- **NASA Open Science**
  Awarded the **NASA Open Science Badge** for contributions to the **Transform to Open Science (TOPS)** initiative.
  Actively engaged in **open science**, promoting reproducible research and data-driven innovation.
- **Remote Volunteering Citizen Scientist at NASA**
  Processed images for **Dark Energy exploration** as part of NASA's citizen science initiative.
  Contributed to the analysis and interpretation of astronomical data, aiding research on dark matter and the expansion of the universe.
  Collaborated with Global team to improve methodologies and refine image processing techniques used in astronomical research.
- **NASA Space Apps Challenge**
  Participated in the **NASA Space Apps Challenge**, collaborating with a global team to develop solutions for space-related challenges.

Gained hands-on experience in problem-solving, innovation, and teamwork in the context of space research and application development.

- **International Astronomical Search Collaboration (IASC)**
  Participated in the **International Astronomical Search Collaboration**, contributing to the detection of **asteroids** and other celestial bodies.
  Gained valuable experience in **astronomical data analysis**, advancing knowledge about our solar system and helping enhance asteroid tracking and detection efforts.
- **International Astronomical and Astrophysics Competition**
  Participated in the **International Astronomical and Astrophysics Competition** reaching the **pre-final round**
  Gained valuable experience in scientific problem-solving and analytical skills in a competitive environment.

## Achievements & Certifications

Software Engineering Intern Certificate – HackerRank | LeetCode – Solved 150+ problems | Code in Place 2024 – Stanford University | NASA Open Science Badge – Contributions to open science | Career Essentials in Software Development – Microsoft & LinkedIn | Data Structures and Algorithms – Simplilearn | Master in Git and GitHub – Udemy | Employability Skills - Job Ready – Wadhwani Foundation | Google Data Analyst – Coursera (Ongoing) | Aspire Leaders Program – Harvard Business School (Ongoing)

## INTERESTS

Technology & Innovation | Space Exploration | Traveling | Self-improvement | Learning new things.