# Swapnajit Debnath

Engineering Undergraduate

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Innovative computer science student specializing in machine learning, deep learning, and data science applications. Melds advanced programming skills with financial insight to engineer cutting-edge platforms. Implements machine learning algorithms for data-driven decision-making. Excels in collaborative development, architecting robust systems to solve complex financial challenges. Proficient in model training, deployment, and version control. Skilled in translating business requirements into technical solutions.

## Work Experience

**Computer Vision Intern** Sep 2023 - Dec 2023

**Cubots (NIT Agartala)**

- Developed a low-light object detection model using PyTorch and TensorFlow, achieving 85% accuracy in challenging lighting conditions.
- Integrated the model with Raspberry Pi and Nvidia Jetson Nano, demonstrating adaptability to various hardware platforms and edge computing.
- Optimized data processing pipelines, reducing model training time by 30%, showcasing skills in performance optimization.
- Collaborated on projects involving Coral AI and machine learning, enhancing expertise in applied AI and team-based development

## Projects

### Credit Risk Assessment Using Machine Learning and Data Analysis

- Developed a comprehensive credit risk assessment model using advanced machine learning algorithms.
- Conducted extensive data analysis on a dataset of 10,000+ loan records, performing feature engineering and model evaluation.
- Achieved 92% accuracy in credit risk prediction, potentially reducing bad loans by 25%.
- Deployed on AWS, enabling real-time assessment of 1000 applications per hour, demonstrating practical cloud service implementation.

### FarmEase: Agricultural Portal

- Architected and developed an intelligent web portal for real-time agricultural news, integrating Hugging Face APIs for advanced summarization and translation.
- Engineered a crop disease detection system with 80-90% accuracy using machine learning models.
- Optimized portal performance, reducing load times by 30%, and increasing user engagement by 40%.
- Implemented RESTful APIs for data retrieval and user interactions, adhering to best practices in API design and employing Git and GitHub for version control and collaborative development.

## Core Skills

- Programming: Python, Java, Go, C++, C
- Machine Learning: Neural Networks, Computer Vision
- Financial Technology: Risk Management, Portfolio Analysis, Quantitative Analysis
- Data Science: Statistical Analysis, Data Analysis, Quantitative Analysis
- Cloud Computing: AWS, Virtual Machines, Docker
- Data Management: Data Processing Pipelines, Distributed Systems, SQL, NoSQL
- Version Control: Git, GitHub
- Tools: PowerPoint, Excel, Jupyter Notebooks (Anaconda), TensorFlow, PyTorch, Scikit-learn
- Soft Skills: Problem-solving, Communication, Collaboration

## Education

**Vellore Institute of Technology** Sep 2023 - Present

**Bachelor of Technology** | Computer Science and Engineering

## Interests

Stock Market Analysis and Research, Photography, Coding, Networking