

Sonjoy Dey

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EDUCATION

- United International University** Dhaka, Bangladesh
• Bachelor of Science - Computer Science and Engineering; CGPA: 3.44 Nov 2020 - Feb 2025
Courses: Operating Systems, Data Structures, Analysis Of Algorithms, Artificial Intelligence, Machine Learning, Networking, Databases

SKILLS SUMMARY

- **Languages:** Python, PHP, C++, JavaScript, SQL, Bash, JAVA
- **Frameworks:** Scikit, NLTK, SpaCy, TensorFlow, Keras, Django, Flask, NodeJS, Langchain
- **Tools:** Kubernetes, Docker, n8n, GIT, PostgreSQL, MySQL, SQLite, Vector DB
- **Platforms:** Linux, Web, Windows, Arduino, Hugging face, AWS, GCP, Kaggle, Google Colab

EXPERIENCE

- Softvence** Dhaka, Bangladesh
• AI Engineer (Full-time) May 2025 - Present
 - **AI System Integration:** Successfully integrated advanced AI systems across 10+ web and mobile platforms, improving performance and scalability.
 - **Global Client Collaboration:** Collaborated with clients across 5 different countries with a 100% success rate.
 - **Efficient Model Optimization:** Achieved a 30% reduction in token usage through context compression, lowering overall query processing costs.
 - **Algorithmic Performance Enhancement:** Optimized similarity search algorithms to achieve a 20% reduction in response latency.
- LegoIO LLC.** Maryland, USA (Remote)
• AI Developer (Internship) Feb 2025 - May 2025
 - **IntQueSel – Intelligent Interview Question Selector:** Developed an LLM-based tool to generate personalized, domain-specific interview questions from resumes and job descriptions.
 - **Product Growth and Impact:** Achieved 1K premium subscribers within the first month of launch through the successful deployment of the IntQueSel AI interview question generator.

PROJECTS

- **Med-SecureNet (Healthcare AI Platform):** Built a secure platform for brain tumor MRI scans using RSA & AES encryption, Vision Transformer (ViT) for classification, and Federated Learning for enhanced performance, ensuring privacy and advanced AI in healthcare. Tech: ViT, RSA, AES, Federated Learning, Django, sqlite3, Python etc. [Link]
- **Easy Migration - Legal Assistance Platform:** Developed an AI-powered assistant to help students with higher studies abroad, supporting visa processing, university selection, and auto-generating ATT, GSS, and Visa letters. Integrated web scraping, LangChain RAG pipelines, Vector DB, and LLM models. Tech:LangChain, Web Scraping, RAG etc. [Link]
- **PoultryScan (AI-based Disease Detection):** Developed a deep learning system for poultry disease detection from fecal images, classifying four conditions. Achieved up to 99% accuracy with Swin Transformer and ViT, and 99.25% with ensemble learning. Tech: VGG19, ViT, Swin Transformer, EfficientNetB7, MobileNetV3, Ensemble Learning, TensorFlow. [Link]
- **IT-Component Lender System:** Developed a system allowing students to borrow electronic components with automated verification via image processing during returns. Tech: YOLOv8, OpenCV, Arduino Uno, ESP32, ESP-32-Cam, Python, C++, MySQL. [Link]

PUBLICATIONS

- **E-MedViTR: Enhanced Vision Transformers with Registers for Biomedical Image Classification:** Published in **IEEE Xplore**. Developed E-MedViTR, an enhanced Vision Transformer model achieving 85.8% accuracy on PathMNIST for biomedical image classification, outperforming existing methods. [View Paper]
- **An Ensemble Deep Learning Approach to Detect Common Chicken Diseases from Fecal Matter Images:** Published in **ACM Digital Library**. Proposed an ensemble deep learning model combining EfficientNet, VGG19, MobileNetV3, Swin Transformer, and Vision Transformer, achieving 99.25% accuracy in poultry disease detection from fecal images. [View Paper]
- **Satellite-Based Environmental Monitoring for Sustainable Well-Being:** Published by **Springer Nature**. Leveraged Sentinel-2 satellite imagery and Google Earth Engine to analyze urban greening dynamics in major Bangladeshi cities (2019–2022), contributing to sustainable urban planning and environmental well-being. [View Paper]

HONORS AND AWARDS

- Champion, **CSE Project Show (Spring 2023)** – Microprocessor and Microcontroller Laboratory
Project: *IT Component Lender*
- 1st Runner-up, **CSE Project Show (Fall 2022)** – Database Management System
Project: *UIU-JontroDokan*
- Solved 300+ programming problems across multiple platforms including LeetCode, HackerRank, and Codeforces
- Completed **Cybersecurity Essentials Course** – Cisco Networking Academy
- Completed **Intermediate Machine Learning Course** – Kaggle
- Software Engineer Intern Offer – **HackerRank**