Keya Mitra

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Technical Profile

MCA graduate with a solid foundation in programming, full-stack development and AI/ML. Experienced in real-world projects involving medical image analysis and report generation. Passionate about delivering impactful digital innovations through agile practices and scalable technologies.

Skills

Languages: C, Java, Python, SQL

Web Development: HTML, CSS, JavaScript, PHP, Streamlit

Soft Skills: Problem Solving, Critical Thinking, Effective Communication, Team Collaboration

Education

Master of Computer Application — Oct 2023 - Jul 2025
Kalyani Government Engineering College, MAKAUT — *CGPA: 8.57/10*

Bachelor of Science in Computer Science — Sep 2020 - Jul 2023
Kanchrapara College, University of Kalyani — *CGPA: 9.06/10*

Higher Secondary — Jun 2020
Kanchrapara Municipal Polytechnic High School, WBCHSE — *Percentage: 83.2%*

Secondary — Jun 2018
Barui Para High School, WBBSE — *Percentage: 58.57%*

Project Work

- **Recipe Recommender** — **May 2025 - July 2025**
  Description:
  - Built a web-based recipe recommendation system that suggests dishes based on user-input ingredients and preferences.
  - Developed the frontend using HTML, CSS, and JavaScript, and implemented backend logic with PHP.

  Tech Stack: HTML, CSS, JavaScript, PHP

- **Breast Mammogram Report Generation Using Deep Learning** — **Feb 2025 – Jun 2025**
  Description:
  - Built a ResNet50 + LSTM model with GloVe embeddings to automatically generate diagnostic reports from mammogram images, enhancing radiologist efficiency by 35% and reducing report turnaround time by 15 minutes per case.
  - Achieved highest CIDEr score and competitive performance on BLEU, ROUGE, METEOR, and BERTScore, outperforming ViT+GPT2 and BEiT+T5 baselines in report generation quality.
  - Engineered a complete pipeline with a Streamlit UI, incorporating Grad-CAM visualizations for interpretability and automated PDF export for clinical documentation.

  Tech Stack: Python, PyTorch, ResNet-50, LSTM, GloVe, NumPy, Pandas, OpenCV

- **Breast Cancer Detection Using Ultrasound Images** — **Oct 2024 - Jan 2025**
  Description:
  - Delivered 80.3% test accuracy with an F1-score of 0.80 and a ROC AUC score of 0.91, demonstrating the model's effectiveness in classifying breast ultrasound images into benign, malignant, and normal categories.
  - Implemented transfer learning using ResNet50 and VGG16, alongside a custom CNN, to maximize model performance.
  - Debugged multiple model training issues (e.g., overfitting, augmentation errors) and resolved them using regularization and early stopping.

  Tech Stack: Python, TensorFlow, Keras, ResNet50, VGG16, CNN, NumPy, Pandas, OpenCV, Matplotlib, Scikit-learn

Achievement

- Scored **87.9167 / 120** in the Joint Entrance Exam for Computer Application (JECA) 2023 and secured **45 GMR**.