Taiabur Rahman

AI in Healthcare | Medical Image | Fullstack Developer
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SUMMARY

AI-driven 3D medical imaging processing classification, segmentation, registration, cloud deployment (AWS, Docker), and cross-functional team collaboration in healthcare environment with Fullstack developer with 4+ years of experience in healthcare, SaaS platforms and DevOps.

EDUCATIONS

Erasmus Mundus Joint Master Degree in Medical Imaging and Applications (MAIA)
Sep 2022 -Aug 2024

The University of Burgundy (France), the University of Cassino and Southern Lazio (Italy), and the University of Girona (Spain).
Field of Study: Medical Sensors, Machine and Deep Learning, Advance Image Analysis, Medical Image Segmentation and Registration, Computer Aided Diagnosis, Computer Aided Surgery and Medical Robotics, E-Health.

MSc. Software Engineering (SE)
Tianjin University, School of Computer Software, China

BSc. Computer Science & Engineering (CSE)
Bangladesh University (BU), Bangladesh

WORKSHOPS & SHORT PROGRAMS

17th EXCITE Summer School on Biomedical Imaging **Sep 2023**
Swiss Federal Institute of Technology Zurich (ETH Zurich)
University of Zurich, Switzerland

Winter School 2023 **Feb 2023**
University of Cassino and Southern Lazio-Italy

EMPLOYMENT HISTORY

Graduate Research Intern **Feb 2024**
EQUIPE EMERGENTE NEUROGEMM INSERM UMR 1231, Dijon, France
Title: Deep Learning-Driven Automated Segmentation of High-Resolution 3D Histological Mouse Brain Volumes.

- Developed deep learning models for automated segmentation of 3D histological mouse brain volume
- Preprocessed large-scale high-resolution 3D image datasets
- Performed model training, tuning, and evaluation
- Collaborated with neuroscientists to validate biological accuracy
- Contributed to research documentation and presentations

Full Stack Developer (Full time) **Dec 2017 - Aug 2022**
Vision Eye Hospital, Bangladesh

- Developed and maintained Hospital Information Management System (HIMS) ERP solution in multiple branches .
- Built modules for prescription, diagnostics, surgical workflow, and patient record keeping.
- Deployed systems on local servers, implemented performance tracking, and maintained system uptime.

RESEARCH PROJECTS

* *Deep Learning-Driven Segmentation of Mouse Brain Volumes*: Developed a NNU-Net-based automated segmentation pipeline for high-resolution histological 3D mouse brain data using Python, PyTorch.
* *Elastix-Based CT Image Registration:* Implemented a rigid and affine registration framework using SimpleITK and Elastix. **[github]**
* *Human Brain Tissue Segmentation (3D volume MRI):* Built U-Net models using TensorFlow and PyTorch for white matter, gray matter, and CSF tissue segmentation. **[github]**
* *Skin Lesion Classification (2d image):* Applied transfer learning techniques with VGG16 and ResNet50 using TensorFlow/ Keras to classify dermoscopic images. Used cross-validation and fine-tuning for performance improvement. **[github]**
* *Retinal Image Analysis (2D image):* Developed a traditional computer vision pipeline using Python (thresholding, morphological operations) for segmented hard exudates. **[github]**
* *Alzheimer's Disease Classification:* Combined MRI-based image features with gene expression data. Applied support vector machines (SVM) and ensemble techniques using Scikit-learn and Python. **[github]**
* *Regression Model Exploration:* Built and compared linear regression and k-NN models using Scikit-learn for healthcare cost prediction, exploring evaluation metrics like MAE and RMSE. **[github]**
* *Deep learning base Image Segmentation Review:* Reviewed traditional vs deep learning segmentation literature. Summarized techniques including region growing, active contours, and CNN-based U-Net architectures.
* *Traffic Simulation & Alert System:* Developed a traffic signal simulation system using Python. Created event-driven logic for violation detection and real-time alerts. **[github]**

KEYWORD FOR ATS

Ai, 3D Medical Imaging, 3D data analysis, Classification, segmentation, registration, PyTorch, Deep Learning, Python, React, VUE Cli, Flask, FastAPI, MySql, Docker, CI/CD, REST APIs, SaaS, AWS

SEEKING OPPORTUNITIES

- R&D and innovation in Medical & healthcare tech (AI, imaging, software)
- Full Stack Software Engineering
- DevOps (CI/CD, Docker, AWS, automation)

TECHNICAL SKILLS

AI/LLM: Gemini, OpenAI
ML/DL: PyTorch, TensorFlow, Keras
Backend: Python (Flask, FastAPI,Django), PHP (Laravel)
Frontend: Vue.js, Typescript, JavaScript, jQuery, React
DevOps & Cloud: AWS Docker, CI/CD, Linux
Database: MySQL, PostgreSQL, SQLite
Tools: Git, REST API, Nginx, Apache

LANGUAGE

- Bengali – Native
- English – Intermediate (B2)
- French – Beginner (A1 – currently improving)

SOFTWARE PROJECTS

AI-Powered Platform for Medical Image Quality Control & Analysis
https://ai-miqa.com
Enhancing diagnostic accuracy and research reliability with intelligent, automated, and secure imaging solutions.

Hospital Information Management System (Healthcare Data)
A web-based platform actively used in 5 hospitals across Bangladesh. Tech Stack: Laravel, Vue.js, MySQL

LINKS

- GitHub: https://github.com/taiaburbd
- LinkedIn: https://www.linkedin.com/in/taiabur-rahman
- Portfolio: https://taiaburbd.github.io