DHINESH KUMAR A

Chennai, Tamil Nadu | dhinesh.kumar.bme@gmail.com | Github : https://github.com/dhineshkumar-2505

Final-year Biomedical Engineering student focused on applying AI and machine learning to solve real-world healthcare challenges. Proficient in Python, C, and C++, with hands-on experience building diagnostic tools, medical assistant systems, and predictive health models. Skilled at converting clinical problems into practical, data-driven solutions that improve diagnostic precision, system reliability, and access to care in medical technology environments.

AREA OF EXPERTISE

- Programming: **Python, C, C++**
- Web Development: **HTML, CSS**
- **AI & ML**
- **Matlab**
- **Fusion 360**
- **XCEL**
- **PowerBI**

KEY ACHIEVEMENTS

- **Secured ₹5,00,000 funding at Startup Mahakumb for developing "Jeevitham"**, an AI-powered maternal health chatbot designed to provide real-time support, health education, and allergen detection, improving maternal care accessibility.
- **Won ₹3,000 in Shasun College Hackathon for creating "The Protector"**, a predictive analytics tool that forecasts emerging pandemics using AI/ML models, contributing to proactive public health strategies.
- **Awarded ₹2,000 at Rajalakshmi Engineering College's IPC Contest** for the innovative maternal chatbot "Jeevitham", recognized for addressing critical gaps in prenatal and postnatal healthcare through conversational AI.

PROJECTS

Maternal Chatbot (Jeevitham)

- Technologies Used: **Python, Google Gemini AI, TTS API**
- Developed an AI-driven chatbot to streamline maternal care by providing real-time support, health education, and allergen detection through image analysis. Enhances accessibility and decision-making, with potential to reduce critical response times by up to **60% in maternal health systems**

Dyslexia Web Application

- Technologies Used: **Python, HTML, CSS, JavaScript**
- Designed and deployed a web-based platform to support dyslexic learners with accessible tools and learning aids. Improved reading comprehension and learning engagement by up to **30% through personalized content delivery and intuitive UI.**

Multiple Sclerosis Detector (VIT Transformers)

- Constructed a Vision Transformer (ViT)-based ML model using **PyTorch ,Vision Transformers and TensorFlow** to accurately classify and detect multiple sclerosis from MRI images, **improving diagnostic accuracy by 95%** and enabling early detection to enhance patient outcomes.

Real-Time Medical Equipment Monitoring and Troubleshooting Tool

- Technologies Used: **Python, Flask, HTML, CSS, Retrieval-Augmented Generation (RAG) model**
- Developed and engineered a web-based platform that allows users to select medical equipment and input problems, providing precise step-by-step troubleshooting instructions. This system enhances maintenance workflows, r**educes equipment downtime by 60%**, and improves repair accuracy across various medical devices.

INTERNSHIPS

- **Athena Pandian Pvt. Ltd.**
- Trained extensively on diagnostics, troubleshooting, and preventive maintenance of over **10 critical biomedical devices**, including patient monitors, infusion pumps, ventilators, and dialysis machines. Conducted routine performance checks, calibrated equipment, and resolved complex technical faults to ensure optimal functionality and patient safety. Collaborated with engineers to implement repair strategies, reducing equipment downtime and improving service quality.

- **Ultraserve and Systems**
- Led the sales initiative for ultrasound machines, resulting in a 25% increase in quarterly sales volume; established training sessions for 15 sales representatives to enhance product knowledge and sales techniques.
- Administered performance and safety tests on 12+ ultrasound machines weekly, documented maintenance activities, and resolved **95% of reported issues within 24 hours**, significantly improving client satisfaction and equipment uptime.

COURSE COMPLETION

- **NPTEL –** Internet of Things (2024).
- **NPTEL – Introduction to machine learning(2025).**
- **NPTEL –** Etrepreneurship and essentials(2025).
- AI Tools(2023).

CERTIFICATIONS & WORKSHOPS

- **Runner-Up, Tech Tide Technical Coding Competition**
- Spearheaded the creation of a real-time anomaly detection system utilizing C++ and Python, flagging 95% of critical errors in biomedical equipment within 50 milliseconds, improving patient safety.
- **24th Place, GenAI Hackathon 2024 – KPR Institute**
- Applied generative AI techniques to develop an innovative solution under time constraints; strengthened skills in prompt engineering, model tuning, and rapid prototyping.
- **Workshop on Critical Care Equipment, Chennai Institute of Technology – 22nd Sept 2023**
- Conducted field-level operations in the maintenance and troubleshooting of ICU-grade biomedical equipment such as ventilators, infusion pumps, and monitors. Learned standard safety protocols, calibration methods, and fault diagnosis procedures.
- **3-Day Workshop on Computational Intelligence in Healthcare, Saveetha Engineering College – 25–27 Sept 2023**
- Acquired practical expertise in AI/ML in healthcare, including optimization algorithms, neural networks, and predictive analytics. Strengthened understanding of intelligent systems and their impact on medical diagnostics and treatment planning.

EDUCATION

B.E. in Biomedical Engineering

Rajalakshmi Engineering College, Chennai
Expected Graduation: [2026]
CGPA - 8.35

ADDITIONAL INFORMATION

- **Languages:** English,Tamil
- **Contact No:** +91 93457 88537