Mashhood Naduvilekandy

mashhoodnk@gmail.com | Phone: +974 55227762
LinkedIn | Nationality: India | Location: Doha | Date of Birth: 07 May 1996

Professional Summary

Research Assistant and Data Analyst with over 5 years combined experience in clinical research, data analysis, and project coordination, including nearly 3 years at Hamad Medical Corporation in trauma and critical care. Builds production-grade tools alongside research work — including a Cerner EMR extraction pipeline, LLM-integrated clinical NLP applications, ML models for mortality and transfusion prediction, and deployed full-stack web applications. Co-authored 10 peer-reviewed publications including publications in Critical Care (IF: 9.3), with manuscripts under review. Received a special recognition award for single-handedly building and running the QHC 2026 abstract program. Mentors residents and interns in systematic reviews and evidence-based research.

Education

- **M.Sc Applied Statistics (Ongoing - Distant)**
  Indira Gandhi National Open University (IGNOU) July 2024 – Present
- **M.Sc Physics**
  Indian Institute of Technology (IIT), Guwahati July 2017 – June 2019
- **B.Sc Physics**
  Calicut University July 2013 – April 2016

Honors & Awards

- **Special Recognition Award** – for organizing the abstract program of Qatar Health Surgery Congress (QHC) 2026, awarded by the QHC Organizing Committee 2026

Work Experience

Hamad Medical Corporation | Research Assistant October 2025 – Present

- Conducting clinical research in Trauma & Vascular Surgery, supporting SAE adjudication, systematic reviews, and retrospective cohort studies.
- Engineered a modular clinical data extraction pipeline parsing 8 Cerner EMR document types into structured Excel using a hybrid regex + LLM architecture, reducing manual data entry to near-zero for 91 research fields per patient.
- Extracting and structuring patient data from Cerner PDF reports (ambulance PCR, lab flowsheets, CT reports, operative notes, discharge summaries) for trauma registry research.
- Supporting data pipeline development and analysis for ongoing trauma studies under Dr. Ayman El-Menyar.

Hamad Medical Corporation | Research Coordinator (Data Analyst & Project Coordinator)
September 2023 – October 2025

- Coordinated multiple research projects in the Trauma and Emergency Department involving doctors, nurses, lab personnel, and trauma staff.
- Recruited eligible patients for clinical studies, ensured ethical compliance, and facilitated timely consent, documentation, and sample collection.
- Managed documentation and workflow tracking using Abhath (for research protocol submissions and monitoring) and Cerner (for patient data and sample status tracking).
- Acted as the primary data analyst for trauma-based studies with datasets exceeding 5 million records.

- Preprocessed, cleaned, and analyzed clinical data using Python (Pandas, NumPy) and SPSS to generate research insights and dashboards.
- Built, validated, and deployed machine learning models (SVM, Logistic Regression, Random Forest, XGBoost, ANN) to predict mortality and transfusion needs.
- Co-authored multiple publications including systematic reviews, umbrella reviews, meta-analyses, and original articles based on research findings.
- Guided medical students, residents, and interns in formulating research questions, designing protocols, and conducting systematic reviews, meta-analyses, and evidence-based studies.
- Supported data extraction and cohort-building directly from Cerner EMR to facilitate retrospective research and real-world evidence generation.

Freelancer | Data Analyst October 2022 – September 2023

- Designed clustering and predictive modeling solutions for diverse industries.
- Developed dashboards and data visualization platforms to present actionable insights.
- Conducted historical data analysis to optimize business processes and strategies.

Alpineaid Management PVT LTD | Administrator (Part-Time) August 2022 – February 2023

- Managed administrative processes and vendor coordination for business operations.
- Optimized project workflows and prepared official documentation.

SJK Constructions LLP | Project Coordinator January 2021 – July 2022

- Monitored project progress and ensured compliance with quality standards.
- Conducted environmental impact analyses and reported actionable findings.

Embibe | Content Researcher January 2020 – December 2020

- Curated and personalized educational content leveraging AI/ML technologies.
- Streamlined data classification processes for improved content delivery.

Projects – Hamad Medical Corporation

- **QHC 2026 Abstract Program: Platform & Operations** 2026
  Qatar Health Surgery Congress 2026
  Single-handedly designed, built and ran the congress abstract program end to end: an in-house web platform covering submission and tracking, three-stage peer review, final approval, program building, presenter files, and live judging and awards. Handled 383 submissions (373 abstracts + 10 videos) from 40 countries, coordinated 33 reviewers and 1,100+ review decisions, and accepted 208 abstracts (54%). Scheduled 21 sessions with 49 moderators and judges, ran 156 presentations and 450+ live judge scores, and built a certificate portal for presenters. Recognized with a special award by the QHC Organizing Committee.
  Tech: Cloudflare Pages, Google Apps Script
- **Clinical Research Data (CRD) Extraction Pipeline** 2026
  Engineered a production-grade Python pipeline extracting 91 structured fields from 8 Cerner EMR document types (ambulance PCR, lab flowsheets, ED triage, CT reports, operative notes, discharge summaries) for a trauma registry study. Designed a hybrid architecture using pure regex for structured documents and Anthropic API with Pydantic-validated structured outputs for free-text clinical notes and radiology reports. Implemented a PHI stripping layer ensuring no patient-identifiable data is transmitted to external APIs. Processes 50 patients at under $1 total LLM cost.
  Tech: Python, pdfplumber, Anthropic API, Pydantic, openpyxl, python-dotenv
- **Clinical Study Patient Tracking App** 2026
  Built and use daily an offline-first iPhone app managing patient recruitment across three hospital studies (beta-blocker RCT, genetic polymorphism, Cardio-Renal). A reminder system ensures no recruitment step is missed; the app assigns treatment arms and RCT codes from troponin results, runs a 12-dose medication schedule with missed-dose rescheduling, tracks Day 10/30/90 follow-ups, and generates WhatsApp updates. Identifiers are PIN-encrypted on the device, with Excel export

for backup.
Tech: React, Vite, Dexie (IndexedDB), Web Crypto, ExcelJS, Cloudflare Workers

- **Predicting Mortality Risks in TBI Patients Using Machine Learning**
  Developed ML models (SVM, LR, RF, XGBoost) to predict in-hospital mortality in TBI patients using trauma registry and EMR data. Published in peer-reviewed journal.
- **Trauma Care Predictive Models**
  Developed ML models to predict triage, transfusion needs, and mortality using hemodynamic data, achieving high accuracy (AUC ROC: 0.89–0.99) for improved trauma care. Published in peer-reviewed journal.

Independent Projects

- **QatarSaloon – Multi-Shop Barber Booking Platform** 2026
  qatarsaloon.com
  Built and launched (beta) a booking platform for barber shops, starting with a live shop. Supports platform admin, shop owner and barber roles, each barber with their own login and schedule. Customers request bookings, barbers get push alerts and confirm via WhatsApp, with customer profiles, walk-ins, reschedule requests and reminders.
  Tech: TypeScript, Cloudflare Workers, D1 database
- **NutriLog – AI-Powered Nutrition Tracker** 2025–2026
  Built and deployed a full-stack nutrition tracking app replacing a manual WhatsApp/ChatGPT workflow for a live user group. Features AI model routing (Claude Haiku for intent detection, GPT-4o for nutrition analysis, Claude Sonnet for coaching), food photo analysis, Plotly weight graphs, and an admin panel with user management.
  Tech: JavaScript, Cloudflare Workers, D1 database, GitHub Pages

Publications

- **Machine Learning Approach for the Prediction of In-Hospital Mortality in Traumatic Brain Injury Using Bio-Clinical Markers at Presentation to the Emergency Department**
- **Machine learning models predict triage levels, massive transfusion protocol activation, and mortality in trauma utilizing patients hemodynamics on admission**
- **Mechanical versus manual cardiopulmonary resuscitation (CPR): An umbrella review of contemporary systematic reviews and more**
- **An update on the mechanical versus manual cardiopulmonary resuscitation in cardiac arrest patients**
- **Open Surgical Versus Endovascular Repair for Type B Aortic Dissection: Umbrella Review and Meta-Analysis**
- **Prehospital plasma transfusion versus standard of care following traumatic injury: a review of the systematic reviews and a metaanalysis**
- **Association of early interleukin-6 level with injury severity and mortality in trauma patients: Systematic review and meta-analysis**
- **Extracorporeal membrane oxygenation in traumatic injuries with acute respiratory distress syndrome**
- **Prehospital Administration of Antibiotics for Patients with Suspected Severe Infection: A Systematic Review and Meta-Analysis**
- **Neurological complications in patients undergoing Thoracic Endovascular vs Open Surgical Repair for Type B Aortic Dissection: A Systematic Review and Meta-analysis** — *Journal of Endovascular Therapy (Accepted, in press)*

Publications – Under Review

- Efficacy of Beta-Blockers Administration in Patients with Traumatic Brain Injury: An Umbrella Review and Meta-Analysis

Technical Skills

- **Programming Languages:** Python, SQL, R
- **AI/ML & LLMs:** Scikit-learn, XGBoost, Keras, NumPy, Pandas, Anthropic API, OpenAI API, multi-model LLM routing, Pydantic structured outputs
- **AI-Assisted Software Development:** Designs, specifies, tests and deploys full-stack applications using Claude Code as the coding agent, owning requirements, architecture, data model, testing and deployment (e.g., QHC 2026 abstract platform, QatarSaloon, NutriLog, patient tracking app)
- **Clinical Informatics:** Cerner EMR, clinical NLP, LLM integration, PHI de-identification, EMR PDF extraction
- **Deployment & Tools:** Cloudflare (Workers, Pages, D1), GitHub, Jupyter
- **Data & Visualization:** Excel automation (openpyxl), Plotly, Matplotlib, Seaborn, Power BI (basic)
- **Statistics & Research Methods:** SPSS, R, systematic reviews, meta-analysis, umbrella reviews, PRISMA, risk-of-bias assessment

Certifications

- **Understanding Basics of Health Research** *(Weill Cornell Medicine – Qatar)*
- **Applied AI Course (Ongoing)** *(Applied AI)*
- **Natural Language Processing Specialization (Ongoing)** *(Coursera)*
- **Introduction to Data Science** *(LinkedIn)*
- **Excel 2021 Essential Training** *(LinkedIn)*
- **Create Charts & Dashboards Using Microsoft Excel** *(Coursera)*

Languages

English (Fluent) | Hindi (Intermediate) | Malayalam (Native) | Tamil (Fluent) | Arabic (Reading Only)