RAAJITHA MUTHYALA

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SUMMARY

Health Informatics professional with 3+ years of experience in data science, data analytics, healthcare research, pharmaceutical analytics, reporting and statistics. Skilled in transforming complex clinical data into regulatory-compliant insights through advanced NLP, predictive modeling, and FHIR-based EHR integration. Eager to apply technical expertise and a passion for healthcare innovation to support data-driven decision-making and impactful research.

SKILLS

Languages: Python, R, SQL, SAS, XML, JSON

Frameworks/Libraries: NLTK, SpaCy, Hugging Face, Transformers, Tensorflow, PyTorch, Keras, Numpy, Pandas, Scikit-Learn, SciPy, Matplotlib, Seaborn, Pyplot, Plotly, ggplot2, R packages

Tools: Microsoft Excel, Outlook, Jupyter, RStudio, SAS Studio, Oxygen XML, DHIS2, Tableau, Postman, Github, PowerBI, GitLab

Technologies/Platform: EDA, Data Visualization, REST APIs, Machine Learning, NLP, Clustering, Regression, Classification, Sentiment Analysis, Topic Modeling, Time Series Analysis, Statistical Analysis

Data Standards: SNOMED, ICD, LOINC, CPT, RxNorm, NDC, HL7, FHIR, HIPPA, HITECH

Soft Skills: Decision making, Problem-solving, Active listening, Empathy, Presentation skills, Leadership, Critical thinking, Cross-functional

EXPERIENCE

Data Analyst Aug 2024 - May 2025
Purkayastha Lab for Health Innovation, Indiana University Indianapolis *Indianapolis, Indiana*
- Lead the design and implementation of machine learning algorithms for clinical data analysis and predictive modeling.
- Develop and maintain NLP systems to process unstructured healthcare data using biomedical ontologies.
- Create scalable clinical decision support frameworks for large-scale patient datasets.
- Collaborate with clinical researchers to translate complex healthcare requirements into technical specifications.
- Present analytical findings to stakeholders and recommend evidence-based interventions.

Research Analyst Aug 2023 - Aug 2024
IU Bio Health Informatics Research Center at Indianapolis, Indiana University Indianapolis *Indianapolis, Indiana*
- Gather and organize healthcare policy data from multiple international sources, including the Czech Republic, Montenegro, and Australia, to support international benchmarking efforts. Perform data preprocessing, cleaning, and validation according to research protocols.
- Demonstrate expertise in SQL for robust data importing, standardization, and manipulation, coupled with advanced data preprocessing and cleaning to ensure top notch data quality.
- Transform complex datasets into insightful visual narratives using R (ggplot2) and SPSS, facilitating strategic decision-making, and emphasizing pivotal trends in healthcare delivery and policy impact.

Data Analyst Jan 2023 - Jul 2023
Viatris *Hyderabad, India*
- Execute analytical testing protocols using HPLC-MS instrumentation. Manage data collection, processing, and reporting using Empower software. Ensure accuracy and consistency in pharmaceutical test data.
- Constructed traceable, audit-ready datasets integrating stability, dissolution, and bioavailability metrics for FDA (U.S.), EMA (EU), and CDSCO (India) regulatory submissions. Develop structured datasets for quality control, enabling batch-wise trend analysis and reporting using SAS and Excel automation.
- Collaborate with formulation and QC teams to analyze critical quality attributes (CQA) and streamline data workflows for bioavailability and stability studies.

Data Analyst Intern Jan 2022 - Dec 2022
MedBound *Hyderabad, India*
- Process and interpret clinical documentation into structured datasets using ICD-10 and CPT, contributing to analytics for outcomes research and patient care optimization.
- Assist in the recruitment and screening of study participants for a clinical trial, contributing to the enrolment process and learning patient selection criteria.
- Leverage Medidata Rave to input, validate, and reconcile case report forms (CRFs) under guidance, ensuring data integrity and regulatory compliance.
- Contribute to the preparation of Institutional Review Board (IRB) submission documents, gaining foundational knowledge in GCP and ethical standards for clinical research.

PROJECTS

- Building EviLivBot: Fine-tuned LLaMA 3.1 model on liver disease and SDOH for biomedical QA and entity recognition.
- Evaluated LLMs for diagnosis prediction, ICD coding, and readmission risk using structured prompts on MIMIC-IV data.
- Developed a biomedical QA system using NER on PubMed abstracts and deployed it via Streamlit.
- Analyzed reproductive health trends and predicted malnutrition using DHIS2 data and time-series models in R.
- Designed FHIR-based data exchange between OpenMRS and OpenELIS using HL7 CDA, REST APIs, and Postman.
- Built a logistic regression model in R to assess CKD risk using blood and urine biomarkers.
- Applied machine learning to predict cardiovascular disease using demographic and lifestyle data in Python.

EDUCATION

Master of Science in Health Informatics Aug 2023 - May 2025
Indiana University Indianapolis *Indianapolis, IN*

Bachelor of Pharmacy July 2018 - July 2022
Jawaharlal Nehru Technological University *Hyderabad, India*

RELEVANT PUBLICATIONS

Student Paper: Towards Automated Diagnosis Mapping in EHRs: Evaluating SciSpaCy Performance in End-to-End Semantic Mapping Pipeline - AMIA 2025

Evaluating Reasoning Capabilities of Large Language Models for Medical Coding and Hospital Readmission Risk Stratification with Zero Shot Prompting (Preprint)- JMIR 2025