Amit Kumar

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Education

- **Indian Institute of Space Science and Technology** — Thiruvananthapuram, Kerala
  Master of Technology in Machine Learning and Computing
  Department of Mathematics — Aug. 2020 – May, 2022
  CGPA: 8.29/10
- **Jabalpur Engineering College** — Jabalpur, Madhya Pradesh
  Bachelor of Engineering in Information Technology — Aug. 2016 – July, 2020
  CGPA: 7.44/10

Experience

- **Circlebase (Intelligent Health Outcomes)** — Bengaluru, Karnataka
  NLP Engineer — Nov 2021 - Present
  - Developed various NLP pipelines and models to identify patient-related entities, social determinants of health, drug relations, adverse drug events, and generate QA pairs for clinical trials.
  - Streamlined processes through the development of executable files, integration with Django-based applications, and Dockerization of chatbot for easier deployment.
  - Employed various modeling approaches such as ARIMA, Holt-Winters exponential smoothing, XGBoost, and Prophetnet to forecast drug consumption based on hospital data for the next 7 days and conducted statistical tests to evaluate the accuracy of the models.
- **Omdena (Internet & Jurisdiction Policy Network)** — Remote
  Machine Learning Engineer — Sept 2021 - Nov 2021
  - Built a knowledge graph with a triplet extractor algorithm that pulls info from Wikipedia articles.
  - Created Datasphere using natural language processing tools like Spacy, Stanfordcore NLP, and NLTK.
  - Used Datasphere to analyze and visualize big textual data, helping policymakers understand complex issues.

PROJECTS

- **Clinical Trial Chatbot**
  - Identified adverse drug events using Named Entity Recognition and connected participants with clinical coordinators based on severity score.
  - Developed a question-answering system for clinical trials using Haystack and generated QA pairs.
  - Enhanced chatbot by creating a dashboard and suggestion features, utilizing large language models for better results, and dockerized it for easier deployment.
- **Intelligent Question Generation**
  - Generated Fill Up, Multiple choice questions, and Wh Factoid questions from articles.
  - Designed POS taggers and deep learning-based fill-ups for text corpus comprehension.
  - Used various tools like Stanford parser, Rake NLTK, Spacy POS tagger, and word2vec for generating different question formats.
- **Abnormal Event Detection in Video**
  - This model provides a way for machines to learn to distinguish between everyday events and unusual activities.
  - Our architecture consists of two main components, one to capture spatial features and the other to understand the temporal evolution of spatial features on the UCSD Dataset.

TECHNICAL SKILLS

- **Languages:** C++, C, SQL, SPARQL, Python, LaTeX
- **Technologies:** SQLite, Git, Docker, GCP

ACHIEVEMENTS

- Qualified for the ACM ICPC 2018 Kolkata-Kanpur site contest held at UIET, CSJM University, Kanpur.
- Codechef Rating - 1883 (amit_9)
- "So you think you can code" Organised a coding competition on Hackerearth.
- Gold medal in chess Avahan 2018 (Intra college competition).