Navya Martin Kollapally

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GitHub: https://github.com/navya777
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GoogleScholar:https://scholar.google.com/citations?hl=en&user=fr79IYkAAAAJ

Education

Doctor of Philosophy in Computer Science: GPA:3.86 — September 2021- August 2024
New Jersey Institute of Technology, Newark, NJ

Master of Science in Computer Science: GPA:3.8 — September 2018- May 2021
New Jersey Institute of Technology, Newark, NJ

Bachelor of Technology in Electrical& Electronics Engineering: GPA:4.0 — June 2008 - August 2012
Mahatma Gandhi University, Kerala, India

Technical Skills

- Databases Management Systems: Oracle, MySQL, MongoDB
- Programming Languages: Python, Java
- Development IDE: PyCharm, Visual Studio, Eclipse, XCode
- Learning Management system: Canvas, Moodle
- Test Management Tools: HP Quality Centre, JIRA
- Test Automation Tool: Selenium Web driver, QTP
- Infosys Application: IPM+ [Defect prevention tool]
- Amazon AWS

Research Interest

My long-term research objective is to develop a framework for automatic ontology building utilizing unstructured text. In the absence of a gold standard in a specific area, my goal is to identify the potential to utilize sentence transformers and large language models (LLM) to learn from the context of data and develop relevant concepts to build the ontology.

My research interests cover the following areas:

- Ontology design, development, and maintenance
- Clinical informatics
- Health data analytics
- Advanced entity recognition using large language models.
- Optimizing Deep Neural Network Hyperparameters for enhanced performance
- Enhancing fairness in clinical decision support systems (CDSS)

Research Experience

Doctoral researcher — September 2021-May 2024

Department of Computer Science, New Jersey Institute of Technology

Advisors: Dr James Geller and Dr Yehoshua Perl

- Created ontologies (SOHO and NCDOH) focusing on social and commercial determinants of health.
- Devised an ontology (HOME) tailored for practitioners to document injuries specifically pertinent to individuals of color.

- Formulated assessment methods to ensure the quality and coherence of ontological structures.
- Contributed to the development of a cardiology interface terminology, enabling fast skimming of unstructured Electronic Health Records (EHR) for physicians.
- Established a hyperparameter optimization framework to discern social context within EHR data.
- Utilized BIOE tagging to train ClinicalBioBERT sentence transformer to identify new concepts relevant to Cardiology Inference terminology from clinical notes.

Graduate research assistant January 2021-May 2021

Department of Computer Science, New Jersey Institute of Technology

Advisor: Dr James Geller

- Analyzed and documented gaps in standard ontologies used in EHR to record hazards experienced by minority populations.
- Justified discrepancies in the documentation of hazards faced by minority communities in EHR systems.

Professional Experience

Nokia Bell Lab June 2024-August 2024

- Patency filed for the development of knowledge graph from technical specification using Llama3
- Developed an automatic pipeline for domain specific knowledge graph in telecommunication domain

New Jersey Institute of Technology January 2021 – August 2024

Teaching Assistant

Served as a TA for:

- Introduction to Data Science CS 301: Fall 2021-Fall 2022
- Advanced Database Management System CS634: Spring 2021
- Database Management Systems CS632: Summer 2023-Fall 2023
- Foundations of Computer Science. CS104: Spring 2022
- Taught Introduction to Python for students with no coding background, motivating them to learn from errors and assistin
- Hosted office hours as additional support to clarify topics in “Introduction to Data Science class.” CS 301: Fall 2021-Fall 20

Department of Defense (DoD) June 2022 – September 2022

Research Assistant (Summer internship)

- Collaborated with Dr. Senjuti Basu Roy on Office of Naval Research Grants No: N000141812838
- Conducted advanced data analytics such as delay estimation, delay prediction for ships under the regional maintenance c
- Executed NLP analysis using Bert and LSTM on the contractor notes from maintenance dictionary.
- Studied delay real-time monitoring for naval ships, which belong to data management for AI problems.
- Developed effective strategies to deal with wide data problem in ML.
- Involved in development of entity recognition model to identify reasons of ship delay from contractors’ notes.

Infosys Ltd Parsippany, NJ October 2018 – December 2019

QA Team Lead

- Lead and guide an offshore team of 7 members in projects involving compass application used by salespeople at Tiffany s
- Closely interacted with Business team at Tiffany & Co. in leading compass projects and coordinating maintenance activitie
- Explained technical requirements to non-technical audience like third party app vendors.
- Pooled resources with a team of 6 members in offshore setting: delegated tasks, monitored progress, and maintained pro

- Identified the ETL jobs which was hindering transaction flow from POS terminal to lower QA environments, this issue was
- Supervised all functions that reduce defect leakage in production.

Infosys Ltd Mysore, India October 2012 – May 2014

Test Engineer

- 2 years of experience in Software Quality Assurance in Banking and Financial sector
- Involved in testing on various levels for SunTrust Bank, Atlanta.
- Involved in maintaining the software quality of Teller Assist application and other financial software in SunTrust Bank.

Accomplishments

- Lead for AMIA semantic group year in review working group 2024
- Peer reviewer for American Medical Informatics Association Symposium, 2023 and 2024
- Nominated for Excellence in Teaching (EiT) Award at NJIT, 2023
- Speaker at New Jersey Alliance for Clinical and Translational Science (NJ ACTS) on “Extracting biased data from Electronic
- Best Student Paper Award at Knowledge Engineering and Ontology Management (KEOD) Conference, November 2021.
- Star Employee of Quarter at Infosys, 2014.
- Innovative Research Award at ADSET (Accelerated Dissemination of Solar energy) INDO-GERMAN Dialogue, 2008.