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MUTHU PRIYA

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EDUCATION

Master of Science, Computer Science, specialized in Artificial Intelligence & Data Science **August 2019 – May 2021**
University of North Carolina at Charlotte, NC, US GPA: 3.9 / 4.0
Coursework: • Intelligent Systems • Knowledge Discovery in Databases • Machine Learning • Applied Machine Learning • Visual Analytics • Natural Language Processing • Emotion Mining • Cloud Computing for Data Analysis • Big Data Design • Consumer Analytics

Bachelor of Engineering, Computer Science, specialized in AI & Software Engineering **August 2013 – May 2017**
Anna University, Chennai, India GPA: 3.81 / 4.0
Achieved a statewide rank of 46 out of a total of ~16000 Computer Science students

TECHNICAL COMPETENCY

- Programming Languages : Python, SQL, Cypher
- ML & Data Science Libraries : Scikit-Learn, Pandas, NLTK, NumPy, Keras, spaCy, RASA Chatbot
- Applications & Tools : Jupyter Notebook, Polarion ALM, Google Colab, MS Office, UiPath, Git
- Data Analytics Tools : MySQL, SAS, Weka, Neo4j, AWS (S3, EMR)
- Data Visualization : Tableau, Python (Matplotlib, Seaborn), Power BI, MS Excel

PUBLICATIONS

- Ranganathan, J., **Shanmugakani Velsamy, M.P**., Kulkarni,S., Tzacheva, A.A., "Emotion Classification using Recurrent Neural Network and Scalable Pattern Mining", in Proceedings of the International Conference on Data Mining, Big Data, Database and Data Management (ICDMBDDDM 2021), New York, United States, January 2021, pp. 1439 – 1444. Abstract Paper

PROFESSIONAL EXPERIENCE

AI/NLP Research Scientist, Siemens R&D, Charlotte, NC, USA **July 2021 – Present**

- Developing a text analysis model thru Information extraction & relation matching for Siemens Business unit using Named Entity recognition (NER) model & other NLP techniques like Spacy, Dependency matching which helps the company to reduce the manual work by 60%.
- Analyze the Json-ld files in Neo4j using Cypher (Graph Query language) to visualize the hierarchical structure of the data and gain insights which is used to better understand the NER model inputs in a diagrammatic way.
- Developing a Chatbot to implement in the Polarion software interface which query's the Polarion database & fetch the results according to the user's request. This is the first ever chat bot implementation in the Polarion Software.
- Detect the patterns in the COMOS object file & recommend the design ideas for the designer in the Human Machine Interaction (HMI) graphic interface.

Analyst, Centina Systems/Ciena, Bengaluru, India **July 2017 – November 2018**

- Developed a Sales forecast model using ARIMA that forecasts company sales and revenue for up to 5 years, based on time series data which increased company sales by 15%.
- Designed and developed multitude of both simple and complex plugins based on direct customer requirements.
- Developed an interface and a program to extensively monitor mission critical company's customer facing Communication network for issues and to automatically trigger alerts for immediate attention of relevant teams.

ACADEMIC AND RESEARCH PROJECTS

Graduate Student, University of North Carolina at Charlotte, NC, USA **August 2019 – May 2021**

- Researched huge volume of Twitter data (~5 million words) to identify sentiment within the group with 85% accuracy → published in the International Conference listed above.
  Tech: **Recurrent Neural Network (RNN-GRU), python, keras, pandas, matplotib, NLTK** Paper
- Developed and implemented a pragmatic Question & answering (QA) model that automatically researches 1000s of pre-loaded public research papers by matching the question key words to provide a response to the user's COVID related questions/concerns.
  Tech: **BERT (Bidirectional Encoder Representations from Transformers) technique, python, pandas** Project
- Performed a thorough case study on a large healthcare dataset (~1/2 million data) to implement data privacy & visualize patient diagnoses statistics like patient count for different diagnosis – to find patterns & capture insights.
  Tech: **SQL, Tableau, python, pandas, Laplace mechanism, matplotlib** Project
- Designed a Marketing strategy for a newly formed Charlotte Soccer team by collecting customer feedback surveys to find the public interests on the team, interpreting & visualizing the results that helped the team in promoting the sport & targeting specific audiences by 30%.
  Tech: **SAS Linear Regression model, Clustering algorithm, MS Excel, Tableau** Project