

Lakshmimanaswitha Chimakurthi

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PROFESSIONAL EXPERIENCE

Software Development Engineer, Nuance Communications Inc, Burlington, MA mPower Clinical Analytics

July 2019 - Present

- Designed and Implemented Sequential Search, which extends the standard search and finds out the patients who have two imaging studies within a defined period.
- Developed a negative findings search filter which suppresses the results containing positive phrases of the given query.
- Added a feature to graph the result set by Patient age, sex, status, reporting provider and an exam completed date.
- Designed and Implemented a highly scalable end to end system to Create and Annotate Datasets for weak labels. The assigned tags in reports are validated against a suite of Nuance AI Marketplace Algorithms and visualized the performance metrics with the Confusion Matrix.
- Developed a feature for tagging the QC critical results on Radiology Reports using Nuance Clinical Language Understanding Engine and increased the detection accuracy by 15% compared to the Radiologist hardcoded detection rules.

Data Science Co-op, Brigham and Women's Hospital, Boston, MA

May - Dec 2018

- Collaborated with the physicians and bioinformaticians and built a pipeline to cluster the Lung-Tissue expression and methylation profiles and identified the clinical associations for each cluster and visualized the results using ggplot in R.
- Built a docker image for cheweb (A tool for visualizing Channing's GWAS results).
- Implemented an autoencoder neural network classifier to classify COPD case/controls on dosage values and improved the AUROC to 0.78 using the stacked approach.
- Built an advanced SQL script to extract 1M Genotype data records from multiple Oracle relational databases and transformed the data into a simplified json structure.

EDUCATION

Northeastern University, Boston, MA

Jan 2017- May 2019

Master of Science in Data Science

Relevant Courses: Machine Learning, Algorithms, Information Retrieval, Natural Language Processing, Database Management Systems, Information Visualization.

VR Siddhartha Engineering College, Vijayawada, India

Sep 2012 - Apr 2016

Bachelor of Technology in Information Technology

Relevant Courses: Database Management Systems, Data Warehousing, Data Mining, Business Intelligence.

TECHNICAL SKILLS

Programming Languages:	Python, R, SQL, C++, Java, Matlab, HTML, CSS, JavaScript
Frameworks:	Django, Flask
Databases:	Oracle, MySQL, MongoDB, PostgreSQL
Machine Learning:	Linear/Logistic Regression, SVM, Tree Based, Neural Networks, Clustering, Boosting
ML Tools:	Scikit Learn, Pandas, Numpy, PySpark, Tensorflow, Keras, ARIMA
Data Visualization:	Tableau, Excel, ggplot, R Shiny, Plotly, Matplotlib, d3.js
Cloud Technologies:	Azure, AWS

ACADEMIC PROJECTS

Sales Analyzer App

Jan - Mar 2019

- Performed Exploratory Analysis on 5-year store sales data from multiple locations.
- Built various forecasting models using LSTM, XG-Boost, and ARIMA, leveraging different feature engineering techniques.
- Visualized the historical and forecasted sales data interactively using d3.js and deployed the flask application on Heroku.

Machine Comprehension Using Common Sense Knowledge

Jan - Mar 2018

- Developed a question answering model trained on a collection of narrative texts, questions related to the texts and pairs of candidate answers for each question, and a DeScript KnowledgeBase for narrative texts regarding everyday scenarios.
- Achieved an accuracy of 59% by topic modelling the texts using BIGARTM.
- Improved the accuracy to 78% using Bi-LSTM with attention and Glove embeddings for input texts.

Search Engine

May - Aug 2017

- Built a WebCrawler to crawl on "The Catholic Church" seed url using BFS and scraped the websites using BeautifulSoup.
- Created an Inverted Index to search over 85k scraped documents.
- Ranked the top 1000 documents for a given set of queries using ranking methods such as Okapi, BM25, tf-idf.

Activities - Winning team member for INFORMS Data Visualization Hackathon - Presented a poster on Boston Crime Data Analysis.