SHREESHA N MURTHY

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PROFESSIONAL SUMMARY

- Worked as an AI Engineer with in-depth knowledge of building end to end trainable/deployable predictive models using Deep/Machine Learning.
- Conducted research on multiple verticals to develop and implement efficient Deep Learning techniques saving the company time and money.
- Handled complete product development cycle from initiation to planning and execution.

EDUCATION

Master of Science in Data Science, August 2019

Worcester Polytechnic Institute (WPI), Worcester, MA

Bachelor of Engineering in Computer Science, First class, May 2011 – May 2015

East West Institute of Technology, Bangalore, India

RELEVANT COURSEWORK

Machine Learning, Reinforcement Learning, Statistics, Linear Algebra, Big Data Analytics, Data Structures, Graph Theory, Design and Analysis of Algorithms, Computer Architecture

WORK EXPERIENCE

Artificial Intelligence Engineer - Razorthink (Bengaluru, India), Mar 2016 – Jul 2019

- Reduced operation costs and time of a banking client by close to 80% by developing a classification model which not only gave predictions but also gave explanations which was previously done by humans who analyzed customer transactions to explain the reason for prediction.
- Built state-of-the-art OCR using CRNN(conv nets and LSTM) which saved more than $10000 for the company from buying a paid OCR from the market
- Helped the company to build an invoice processor using saving HR's time in filtering the resume screening process. The application reduced operations time by 60x (from 1 hour to 1 minute) to filter 500 resumes.
- Used start-of-the-art Artificial neural networks like FFN, CNN, LSTM for model building
- Built customer churn, upsell, cross sell, customer retention, customer worthiness models in Deep Learning
- Extensive data analysis on supervised and unsupervised datasets in Computer Vision, NLP, BSFI sectors.

Junior Software Engineer - Razorthink (Bengaluru, India), Jul 2015 – Feb 2016

- Built web applications/services in Java/Python using Spring/Flask Frameworks.
- Built and maintained complex database models in MySQL and MongoDB.
- Conducted research and assisted the company to decide between MongoDB and Cassandra

SKILLS

- **Programming Languages:** Python, Java, JavaScript, HTML
- **Databases:** MySQL, MongoDB and Cassandra (Basic Level).
- **Machine/Deep Learning Domains:** Computer Vision, NLP, Banking/Insurance/Telecom sector
- **Machine/Deep Learning Algorithms:** Gradient Optimizations, Decision trees, FFN, CNN, RNN(LSTM), Clustering Algorithms, Word2Vec, Glove, Genism, CTC, Beam search decoder, Intents and Entity Extractors
- **Neural Networks Architectures:** Dynamic Co-attention networks, Attention and Pointer networks, Deep Belief nets, YOLO, OpenPose, VGG Net
- **Frameworks and Libraries:** TensorFlow, Pandas, Sklearn, Numpy, Spacy, NLTK, Flask, Spring Boot, Spring Data, Hibernate, JQuery, Rasa NLU, DialogFlow

PROFESSIONAL PROJECTS
Deep Learning:

- **Intelligent Document Parser**
  Built an Invoice processor tool to segregate date, currency, total, list of items, address etc. Scanned bills were uploaded as images. Built in-house OCR and used word2vec model to segregate the fields. Model achieved accuracy of 82% when tested on 1000 bills.

- **Model Explainability**
  Built a framework to explain the prediction done by DL model. Used the trained model weights and activations and combined them with raw customer data to come up with explanations of the prediction.

- **End to End Trainable OCR – CTC**
  Based on https://arxiv.org/abs/1507.05717. Developed an end to end trainable OCR. Trained on more than 50 types of font with a dataset size of 10 million word images. Predicts across 104 characters (Alphanumeric, special characters, currency symbols). Accuracy-81%.

- **Conversional AI**
  Built a tool for users of an organization to ask questions in English language about their data stored in databases. This English sentence was translated into SQL query and executed. Trained a classifier to extract intents and entities based on RASA's NLU framework.

- **Customer Retention Model**
  Built a LSTM–FFN ensemble network for a customer retention use. Used customer transaction, bureau and demographic data to model the solution. Client were able to cut down the operations cost by 50% with a top 3 decile capture rate of 90%

- **Customer Credit Worthiness Model**
  A binary classification problem. Used customer transaction, demographic data to predict how likely a customer will default if given a loan. Used LSTM for extracting behavior over time and a FFN for the final decision maker. Model was able to cut down operations cost and time with a test GINI of 76%.

- **Customer Churn Model**
  Designed a LSTM–FFN ensemble to predict if a customer exits from an insurance policy based on previous premium payment trend. Helped company target customers who would most likely churn. Test GINI – 68%

- **Life Insurance Propensity Model**
  Combined customer's debit transaction and mode of transaction to feed it to a convolution stack. Extracted features from the CNN along with demographic of the customer was used to make predictions on the likeliness of customer buying an insurance policy. Test GINI – 70%

Web Application:

- **ResultGenie – SpringBoot, MySQL, MultiTenant Architecture (Personal Project)**
  Built a result analysis tool with my colleague for engineering colleges in Karnataka. The tool reported student/subject/branch performances over each semester to colleges with graphs and charts for easy analysis.

- **ShredsKerala – SpringBoot, MySQL**
  A Job portal where an employer uploads their requirements and registered candidates can apply to the jobs they are eligible for

- **Sarvint – SpringBoot, MongoDB, HTML, JQuery**
  Built a backend architecture to collect pulse information and report heartbeat and other useful information about the user's activity.

AWARDS
Won the 'Best Innovative Idea' award for implementing an optimized food delivery system in 'Opiniothon' hackathon