RISHI MODY

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EDUCATION

University of Massachusetts Amherst, Massachusetts, United States **May 2018**
Candidate for Master of Science in Computer Science (CGPA 3.75/4).

Visvesvaraya National Institute of Technology, Nagpur, India **May 2016**
Secured a Bachelor of Technology in Electronics and Communication engineering.(CGPA: 3.5/4).

PROFESSIONAL EXPERIENCE

University of Massachusetts Amherst, Massachusetts, United States **July 2017 - September 2017**
Graduate Research Intern with Prof. Rene Just

- Designed and developed a standalone mutation analyzer for the **Major** mutation framework.
- Programmed the output interface to summarize the results of the analysis carried on the test suite.
- Developed examples and integrated the analyzer to the previous release after restructuring and using version control.
- Automated the multistep process of running the standalone analyzer on its corresponding example.

Nectar Globe Technology Solutions, Mumbai, India **May 2014 - July 2014**
Software Development Intern (Big Data and Web Development)

- Developed a global tweet extractor that accepts multiple parameters as input criteria for searching relevant tweets.
- Analyzed the stored tweets using ElasticSearch and generated required insights and predictions for market research firms.
- Developed and designed the front end of an Indian hotel room booking website.

CMC Ltd., Mumbai, India **May 2013 – August 2013**
Software Engineering Trainee

- Trained to develop project modules (C++, Java) as a part of the software development process for product deployment.

PROJECTS

Enhancing skill taxonomy for Burning Glass Technologies, Boston advised by Prof. Andrew McCallum *(Spring 2018)*

- Extract unstructured Wikipedia data to run NER model to identify possible new skills that can be added to the taxonomy.
- Use structured wiki data to analyze relational or hierarchical tree structure of skills to create knowledge graph of skills.

Developing Automated Algorithmic Options Trading Strategies *(Spring 2018)*

- Developing modules that control decisions to enter a trade, quantity of trade, risk management and roll-over decisions.
- Plan to optimize each module using machine learning and compare performance with a pre-decided benchmark.

Predicting Steering Angles in Self Driving Cars using Neural Networks (Fall 2017)

- Designed and applied CNNs to predict the angles using images of the road captured from behind the car's windshield.
- Applied pre-trained VGG16 model and extended using Dropout and Dense layers to compare results of indigenous CNN.
- Performed data augmentation using methods for shift, shadow and flip for a more generalized perception of the data.

Search Engine: Design and Implementation (Fall 2017)

- Implemented an end-to-end IR engine for structured query retrieval on Shakespearean literature with a focus on performance evaluation, rank relevance order and efficient index creation for storage.

Assessing the impact of various factors on movie revenues with a focus on critic reviews (Fall 2017)

- Evaluated sentiments of movie reviews using Naïve Bayes and calculated sentiment scores using NLTK Vader.
- Predicted revenue using ML techniques including Decision Trees and regression models on relevant handcrafted features.

Distributed Home Automation System (Spring 2017)

- Simulated a distributed network of virtual devices to develop a smart home system.
- Using RPCs for communication, the devices worked seamlessly with clock synchronization, fault tolerance, event ordering, consistency and consensus protocols.

Predicting Soccer League winners using Machine Learning (Spring 2017)

- Used feature selection and PCA to identify important features of self-curated dataset and their impact on a match's score.
- Incorporated ML models such as SVM, SGD etc. to predict results of individual matches and thus the winner of the league.
- Studied the extent of effect of past seasons' performance and team brand name on predictions of results.

Internet of Things based Home Automation System using Raspberry Pi (2016)

- Developed an Android app to control devices in a self-designed smart home having a Raspberry Pi central server.

TECHNICAL SKILLS

Java, Python (including numpy, scikit-learn and matplotlib), C/C++, HTML, CSS, SQL, Keras, TensorFlow, MATLAB, PostgreSQL

CERTIFICATIONS

- Full Stack Web Development, freeCodeCamp
- Robotics workshop by Microchip

EXTRA CURRICULAR ACTIVITIES

- Graduate Assistant (CS520, **Fall 2017** & CS111, **Spring 2018**):
  - Instrumental in designing, debugging and grading course assignments to facilitate understanding of SE principles.
  - Pivotal in mediating discussions related to paper reviews, project deliverables and labs for a class size of over 100.
- Core-Committee member, E-Cell VNIT (2014-2015): In-charge of event planning, publicity and execution.
- Elected as the Head of Corporate Relations, Consortium '15 VNIT for sponsorships and events.
- Ed-Support Volunteer, Make a Difference: Taught English and Math to under privileged children in Nagpur, India.