Kaushik Madala

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**EDUCATION:**

University of North Texas, Denton, TX, USA January 2016 – present

Ph.D. in Computer Science and Engineering CGPA: 4.0/4.0

Research Topic: Automated model-driven requirements analysis and testing

Courses: Data Science, Data Mining, Natural Language Processing, Information and Web Retrieval, Modeling and Simulation, Software Testing

University of North Carolina at Charlotte, NC, USA August 2014 – December 2015

M.S in Computer Science CGPA: 3.63/4.0

Courses: Intelligent Systems, Artificial Intelligence in Gaming, Intelligent Robotics, Computer Vision, Algorithms and Data structures, Database Systems.

R.V.R & J.C College of Engineering, Andhra Pradesh, India July 2010 – April 2014

B.Tech in Computer Science and Engineering CGPA: 8.95/10.0

**WORK EXPERIENCE:**

University of North Texas, Denton, TX, USA June 2016 – present

Research Assistant, Research in Software Engineering Lab

* Working on automation of model-driven requirements analysis
* Working on automatic extraction of features required for building model from natural language requirements using pre-trained word embeddings and LSTM Recurrent Neural Network of tensorflow.
* Working on finding abnormal behaviors and defects in requirements to prevent catastrophic events in safety-critical systems and prevent failure of end product

**TECHNICAL SKILLS:**

Programming Languages: Java, Python, C, C++, C#

Web Technologies: HTML, CSS, JavaScript, PHP

Libraries: Tensorflow, Keras

Applications/Tools/Others: MySQL, Weka, LabView, MATLAB, Microsoft Visual Studio

**ACADEMIC PROJECTS:**

**Classification of security level in requirements document April 2017- Current**

* Using LSTM Recurrent neural network in tensor flow, language models are being created for requirements documents with no security and requirements documents that contain security and are used to classify if a document has
* It aids in finding the level of security requirements present without going through requirements document.
* Technologies: python, tensorflow

**Clustering Java application repositories in Github for software categorization Oct 2016 – Dec 2016**

* Using distributed environment of UNT called Talon and k-means algorithm, java application repositories from github are grouped into clusters for software categorization.
* K values of 10, 25, 50, 75, 100 and 150 are used.
* Findings: Java applications are hard to cluster using term frequency and cosine similarity. A different of tokenization and similarity calculation is necessary.
* Technologies: Java, Talon 2.0 (distributed environment)

**RESEARCH PROJECTS:**

**Toward Automation of Identification of Domain Elements from Requirements Documents (submitted for publication)**

* Using tensorflow LSTM recurrent neural network we generate models for identifying IOB tags of each domain element of Causal Component Model(CCM) in natural language requirements document

**A survey of model-driven requirements analysis: Approaches and tools (submitted for publication)**

* Research papers on model-driven requirements analysis from 2000 to 2016 are studied and insights and future directions for the field are provided

**AWARDS:**

* Academic achievement scholarship 2016-2017