SANDEEP REDDY KATYPALLY

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AREAS OF SPECIALIZATION

Deep Learning, Machine Learning, Computer Vision, Data Mining

EDUCATION

NORTH CAROLINA STATE UNIVERSITY (Raleigh, NC) **August 2015 – May 2017**

Master of Science, Electrical Engineering (Computational Intelligence)

Relevant Coursework: Pattern Recognition, Topics in Data Science, Foundations of Software Science, Applications of Graphs and Graphical Models, Software Engineering, Design and Analysis of Algorithms

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE- PILANI (Hyderabad, India) **August 2010 - May 2014**

Bachelor of Engineering, Electrical and Electronics

Relevant Coursework: Data Mining, Machine Learning (MOOC), Probability and Statistics, Object-Oriented Design and Development

PUBLICATION

INTERNATIONAL JOURNAL FOR LIGHT AND ELECTRON OPTICS, ELSEVIER **September 2015**

View Invariant Real-Time Gesture Recognition

This publication describes a gesture recognition system that is built using Hidden Markov Models(HMM) which can identify complex human gestures at real-time

"View Invariant Real-Time Gesture Recognition." Optik-International Journal for Light and Electron Optics.

PROFESSIONAL EXPERIENCE

AMAZON ALEXA (Boston, MA) **May 2016 - August 2016**

Machine Learning Scientist Intern, Alexa Wake Word

- Developed machine learning models to predict the performance of the deep learning model of the 'wake word' feature on the voice assistant device Amazon Alexa

INDIAN INSTITUTE OF SCIENCE (Bangalore, India) **June 2014 - July 2015**

Research Assistant, Solid State and Structural Chemistry

- Developed a machine learning system which predicts the protein binding sites in the DNA in the human cells

CENTRAL ELECTRONIC ENGINEERING RESEARCH INSTITUTE (Pilani, India) **June 2013 - December 2013**

Research Assistant, Computer Vision Lab

- Developed a human gesture recognition system using Markov models, dimensionality reduction techniques like *Principle Component Analysis* and *Vector Quantization*

PROJECTS

End to end evaluation of a keyword spotting system on Amazon Alexa

- Built a machine learning model to predict the performance of a hybrid deep learning model, which is used for keyword spotting in speech recognition

Prediction of protein binding sites on DNA in the human cells

- Built a supervised classification system using techniques like *Support Vector Machines*, *Clustering* and *Bayesian Estimation* methods to predict where the protein molecules would bind to the DNA molecules in the human cells

Human gesture recognition from different viewpoints using 3D sensors

- Built a gesture recognition system using multiple 3d sensors to get highly accurate results even when the person is not facing the camera

Comparison of Naïve Bayes to other supervised algorithms on skewed datasets

- Compared the performance and time of Naïve Bayes classifier to that of other complex supervised learning algorithms on multiple skewed binary datasets

Activity recognition system using accelerometer data

- Built an activity recognition system using Hidden Markov models that can recognize daily activities of a person from the accelerometer sensor data

TECHNICAL SKILLS

Programming skills: Python**,** C++**,** MATLAB
Applications and Tools: Tensorflow, Scikit-learn, NumPy**,** SciPy