Narendra Nath Joshi

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Education

CARNEGIE MELLON UNIVERSITY, SCHOOL OF COMPUTER SCIENCE — Pittsburgh, PA
Master of Science, Intelligent Information Systems — Aug 2016 - Dec 2017

- COURSES: Machine Learning, Language and Statistics, Advanced Multimodal Machine Learning, Machine Learning for Text Mining, Deep Learning, Search Engines, Lean Entrepreneurship

PES INSTITUTE OF TECHNOLOGY, DEPT. OF COMPUTER SCIENCE — Bangalore, India
Bachelor of Engineering, Computer Science — Sep 2011 - Jun 2015

Skills

- PROGRAMMING: Python, Java, JavaScript, C, Matlab
- DATA SCIENCE: Python scikit-learn, Caffe, Keras, TensorFlow, MySQL, Stanford CoreNLP, Python NLTK, OpenCV
- WEB AND MOBILE: HTML/CSS, Android, Django, MySQL, MongoDB, Flask, Jinja, PHP, Node.js, AngularJS

Experience

DISNEY RESEARCH (Research Intern, Summer) — May 2017 – Aug 2017 (Pittsburgh, PA)

- Built a speech-based conversational agent for kids with responsive listening features like backchanneling (automatically saying 'uh huh' and 'hmm' during conversations)
- Worked on machine learning models for backchannel time and occurrence prediction, kids' emotion level prediction and turn-taking time prediction
- Evaluated human-likeness of the agent using conversations with 40 real kids aged 7-11 and obtained satisfactory results from human annotation evaluation despite automatic speech recognition challenges with this population
- TECHNOLOGIES: Python, Bash, openSMILE, scikit-learn

SENSARA TECHNOLOGIES (Product Engineer) — Aug 2015 – Jul 2016 (Bangalore, India)

- Built adbreaks.in, an open, real-time semantic B2B search engine of television ads in Indian channels
- Implemented REST APIs including search capabilities for adbreaks.in and the Sensy Android app using information retrieval techniques from Wikipedia (infobox + content) and OMDb for actors, crew and titles
- TECHNOLOGIES: Python, Bash, NLTK, Django, MySQL, Jinja, HTML/CSS

INTUIT (Software Engineer Intern, Co-op) — Jan 2015 – Jun 2015 (Bangalore, India)

- Worked on maintaining and testing mint.com REST APIs as part of Mint Platform team
- TECHNOLOGIES: Java, Bash

Projects

VISUAL QUESTION ANSWERING [Python, Caffe, Keras, TensorFlow] — Carnegie Mellon University

- Implemented a deep learning system for visual question answering using the MSCOCO dataset and neural module networks
- Experimented with versions of CNNs (convolutional neural networks) for image processing and understanding and LSTMs for natural language processing and understanding
- Achieved 57.1% overall accuracy on the VQA challenge leaderboard compared to the state-of-the-art of 58.0%

AUTOMATIC GAP-FILL MULTIPLE CHOICE QUESTION GENERATION [Python, NLTK, Stanford CoreNLP] — Carnegie Mellon University

- Used Wikipedia corpus and applied unsupervised techniques and word embeddings for multiple choice question generation with three wrong but convincing options
- Created a statistical automatic evaluation technique (QQS - Question Quality Score) for multiple choice question generation
- Obtained an average QQS of 71% on various data sources like Harry Potter and research papers, verified against human annotators

CUSTOMER CARE CHATBOT FOR MOBILE PHONE SALES [Python, NLTK, NumPy, SciPy] — PES Institute of Technology

- Built a chatbot that accepts and answers English queries ranging from the price of a particular model to feature comparison between two devices
- Used in-house data to train question-answering model using n-gram models, MaxEnt classifiers and Markov models
- Achieved 65% precision and 71% recall on human volunteers, best in our class

DRIVER FATIGUE DETECTION SYSTEM [Python, OpenCV, NumPy, MongoDB, JavaScript, HTML/CSS] — PES Institute of Technology

- Computer Vision based project focused on real-time driver fatigue detection by video processing on face
- Detected yawns and measured eye blink durations and frequencies to determine if the driver was drowsy
- Achieved 89.3% accuracy and 97% recall on 27 real volunteer drivers, was judged Best Capstone project for social impact
- Published in IEEE International Conference on Signal and Image Processing, China 2016 [IEEE link]

Hackathons and Extracurricular

- Best Capstone Project (Social Impact), PESIT 2015
- Finalist (top three), SAP Lumira Hackathon 2014
- Featured in KDnuggets for machine learning on Medium
- Won Intuit Android Hackathon, Intuit 2014
- Finalist (top five), Ayana 2014 (PESIT annual hack)
- Finalist (top two), Google India technology quiz 2015