Sheetal Shalini

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EDUCATION

B.Tech in Computer Science and Engineering, Senior Year — Jul 2014 – Present
National Institute of Technology Karnataka, Surathkal, India
- CGPA : **9.17**/10
- Rank : **10**/110 (May 2017)

Pre-University - Narayana College - 98.8% — Jun 2012 – May 2014
High School - Bishop Cotton Girls School - 97.4% (ICSE) — Jun 2002 – May 2012

ENTREPRENEUR EXPERIENCE

Co-Founder and Developer, eManageHealth, Bangalore — May 2016 – Present
- Technology Platform for the World of Healthcare.
- Developing a complete and powerful end to end Software solution using MEAN and MERN architectures for Healthcare Providers to efficiently manage Patient Consultation and Clinic Management at affordable price.
- Working on incorporating AI and ML techniques for intelligent diagnosis and automatic prescription generation. Integrating artificial neural networks using backpropagation for pattern recognition and prediction in automated diagnosis, as well as performing effective classification of patient health issues using support vector machines.

RESEARCH EXPERIENCE

Summer Research Intern, Indian Institute of Science, Bangalore — May 2016 – Jul 2016
- Natural Language Processing (NLP) - A cognitive approach to Metaphor Detection
- In an ongoing research program called DIAMETERS, I aided in the development of a Cognitive Markup Language (CML) to solve various types of NLP tasks such as metaphor detection, sarcasm detection, irony detection, Anaphora Resolution and named entity recognition.
- DFS Labelling of the Stanford parse tree for identifying chunks, along with its Concreteness-Abstractness measure was performed and evaluated.
- Dependency tags for each sentence were generated and this helped in determining phrasal relationships.

Research Intern, Indian Institute of Technology, Mumbai — Dec 2015
- Scilab Optimization Toolbox.
- Developed optimization modules of fminimax and fgoalattain functions and tools in C++ for an open source numerical computation software, Scilab.

PUBLICATIONS

- **Sheetal Shalini**, Navya R S, Neha M, Pravin Ramteke and Shashidhar G. Koolagudi, ”Automated Evaluation of Attendance and Cumulative Feedback using Face Recognition”, accepted in International IEEE Conference on Computing for Sustainable Global Development 2018.

INDUSTRY EXPERIENCE

Software Engineering Intern, Microsoft India Development Center — May 2017 – Jul 2017
- Azure Guest OS Deployment Team
- Made a dashboard to keep track of the OS compliance status of all the virtual machines that Azure is deployed on.
- Used internal frameworks to extract optimized data from the multitudes of data in the telemetry and present it to the deployment team, executives and service owners.

TECHNICAL SKILLS

Languages (C,C++,R,Java,Python), **Android App Development** (Eclipse,Android Studio), **Web Development** (HTML,PHP,SQL,JS,Django,AJAX,NodeJS,AngularJS,MongoDB,ReactJS,ExpressJS), **OS** (Windows,Linux,xv6,Akaros,Tornado), **Tools** (Git,STL,Latex,Bitbucket,Scilab,Matlab)

SELECTED PROJECTS

- Developing an ontology using multilingual information extraction and aggregation : Crawled through the multitude of multilingual information available on the internet using python libraries like Goose and JusText and developed an ontology of entities and events connecting these entities. Performed news summarization of online newspaper crime reports, tokenization and POS tagging using NLTK and Shallow Parser, Named Entity Recognition (NER) using Polyglot for hindi text, Word Sense Disambiguation (WSD), relationship extraction and machine translation. Working on performing image tagging and correlation, transliteration and translation from Hindi to English and extracting information from social networking sites like Facebook, Twitter and Instagram.

- Anomaly Detection in Social Networks : Used graph mining, machine learning and OddBall algorithm to detect link-based static anomalies in weighted graphs of social networks. OddBall uses the density, weights and eigen values of the egonet (1-step neighbourhood) of each node to calculate the outlierness score. It's based on the 3 power laws, EDPL (Egonet density power law), EWPL (Egonet weight power law) and ELWPL (Egonet Lambda weight power law). Perfomed the algorithm on facebook dataset from SNAP (Stanford Network Analysis Project). Assigned edge weights to the unweighted facebook graph based on the similarity of features of the end nodes of each edge. Technologies used were R and python.
- Automated attendance and Cumulative Feedback system : Developed a system to digitalize the procedures of attendance and professor feedback. Worked on technologies like Video and Image Processing using OpenCV in python, Local Binary Pattern Histograms (LBPH) and Eigen Face recognizers, machine learning algorithms like feature extraction using SURF (Speeded up robust features), k-means clustering, Naive Bayes classification and k-fold cross validation.
- Risk alert in accident prone areas : Developed a django application to dynamically track the locations of the users and employ machine learning techniques like Naive Bayes classification, genetic algorithm and fuzzy c-means clustering to predict the amount of risk involved based on their age, gender and expertise of driving and notify them of the same.
- Denoising Brain MR Images : Implemented a trilateral filter to denoise brain MRI with Rician Noise. Used image processing techniques like Rough Set Theory (RST) to obtain the Rough Entropy Threshold (RET), Rough Edge Map (REM) and Rough Class Labels (RCL) to produce the third component of a bilateral filter.
- Lighte - a smart android application for the blind : The application includes storage and retrieval of documents, emergency calls and messages, and location assistance using automatic speech generation and recognition. Worked on technologies like Android Studio, Microsoft Azure, speech to text conversion, Google Maps integration and SMS API.
- Dynamic load balancing : Developed a distributed and dynamic load balancing system using OpenMPI. Implemented truthful payment mechanism to yield minimum overall expected response time as proposed in the paper Algorithmic Mechanism Design for Load Balancing in Distributed Systems.
- Compiler Design : Designed the lexical, syntax, semantic and intermediate code generation phases of a C compiler using Lex and Yacc.

All projects available on Github (https://github.com/sheetalsh456).

ACHIEVEMENTS AND AWARDS

- **National Finalist at Code.fun.do Microsoft Hackathon 2016**
- **Successfully completed Applied Computer Science with Android Google workshop**
- **IEEEXtreme Student Ambassador at NITK 2017**
- **Stood in the top 0.2% in the country with a rank of 3156 out of 14 lakh students in JEE Mains 2014**
- **Received "A. W. Gnanakan Prize" for excellence in English proficiency**
- **Received "Khaleel Prize" for Outstanding Performance in Mathematics**
- **Received Trophy by Edurite "In Recognition of Outstanding Performance in Academics**

EXTRA CURRICULAR ACTIVITIES

- Executive Member of IEEE NITK student chapter.
- Executive Member of Web Enthusiast's Club NITK.
- Volunteering for societal initiatives by Ministry of Human Resource Development (MHRD), Government of India.
- Executive Member of Computer Science Committee at Engineer, the technical fest of NITK.
- Executive Member of Marketing Team at Incident, the cultural fest of NITK.

MORE

Please visit my personal website (https://sheetalsh456.github.io/).

[*CV compiled on 2017-11-18*]