Himanshu Taneja

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EDUCATION

Texas A&M University, College Station, Texas *May 2018*
Masters of Science in Electrical Engineering, GPA: 4.0
Courses: Linear Algebra, Statistical Theory, Regression Analysis, Natural Language Processing, Structural Bioinformatics
USICT, Guru Gobind Singh Indraprastha University, Delhi, India *May 2016*
Bachelor of Technology in Electronics and Communications Engineering, GPA: 74.85/100

SKILLS

Programming Languages
Most experienced with C++, Java, Python, R, Matlab
Some experience in C, Bash, Awk, SQL
Tools and Libraries
Git, Regular Expressions, Apache Spark, Microsoft Excel, Relational Databases, NLTK, scikit-learn

PROJECTS

Recommendation System for News Stories (Thesis) *Ongoing*
- Gathering and analyzing article structure of news stories from digital platforms such as Reddit, CNN & FoxNews
- Identifying the attributes that differentiate front page news from other stories; using Natural Language Processing techniques to design a model that can suggest top news stories to the editors

Part-of-Speech Tagger *Jan – Mar '17*
- Implemented a Hidden-Markov model in Python to tag words in a text corpus as Noun, Verb, Preposition etc.
- After initialization the model can improve upon itself by learning from the already tagged words.

Molecular Conformation Optimization *Jan – Mar '17*
- Designed a Monte-Carlo sampling method in Python to optimize the placement of atoms in 3-dimensional structure of a molecule.
- The application is scalable to any number of atoms requiring only 3 bytes of storage per atom and has a constant-time complexity per iteration

Sequence Aligner *Jan – Mar '17*
- Implemented the Needleman-Wunsch algorithm in Python to align Protein and DNA sequences
- The application can scan through a database of sequences and return the best match possible for a target sequence

Classification of Stacking Fault Energy of Alloys *Aug – Dec '16*
- Analyzed the effect of chemical composition of Steel alloys on their Stacking Fault Energy (SFE)
- Identified most significant elements affecting SFE of alloys using T-test and Principal Component Analysis
- Trained and benchmarked the classification algorithms (Linear Discriminant Analysis, K-Nearest Neighbors, and Support Vector Machines) on the dataset

Automatic Text Classification and Summarization *May – Aug '15*
- Developed a text classifier using machine learning algorithms (Naive Bayes, K-Nearest Neighbors, and Support Vector Machines)
- Designed a bootstrapping approach to generate summary of news article using their headlines
- Techniques used: stop-words removal, stemming, term frequency-inverse document frequency, additive smoothing

Image Enigma: Encrypt Digital Images *May – Aug '15*
- Implemented the Enigma Machine (a polyalphabetic cipher) in Python and engineered it to encrypt digital images

Person of Interest *May – Aug '15*
- Analyzed Enron dataset in Python using machine learning algorithms to identify persons of interest in the Enron Scandal

VocabList: A cross-platform application *May – Aug '15*
- Developed a cross-platform GUI application using Kivy Framework in Python to maintain a database of words for improving vocabulary

ACTIVITIES

TechSpace (Technical Club at USICT) *Jan '14 – May '16*
- Organized InfoXpression (Annual technical fest) and monthly LAN Gaming Contests
- Presented seminar on "Python Programming Language in Data Science"