Himanshu Taneja

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OBJECTIVE

Seeking full-time opportunities in Software Development, beginning May 2018.

EDUCATION

Texas A&M University, College Station, Texas Aug'16 – May'18
MS in Electrical and Computer Engineering, GPA: 4.0

USICT, Guru Gobind Singh Indraprastha University, Delhi Aug'12 – May'16
B.Tech in Electronics and Communications Engineering, GPA: 74.85 on scale of 100

SKILLS

Programming Languages: Java, C++, Python, Javascript, Bash
Web Development: HTML, JSON, CSS, Flask, Jinja, jQuery
Tools and Databases: R, MATLAB, SQL, NoSQL, SQLAlchemy, Git

PROJECTS

Personalized News Reader & Summarizer | flask-reader.com
A web application in Python using Flask framework. The application uses RSS feeds to aggregate news stories, and textrank algorithm to generate their short summaries. Users can sign-up for an account, customize news feed, save news stories, and organize them with tags.

- Designed & implemented an MVC based architecture for the web application; outlined a relational database model to manage application's data: used PostgreSQL as the database and SQLAlchemy as the ORM tool
- Wrote two client-side libraries in Javascript: Text-rank to summarize news articles, and Decision-tree based tokenizer to detect sentence boundaries
- Built a responsive & asynchronous UI using jQuery and Bootstrap

Molecular Geometry Optimizer
A Java application to optimize 3-dimensional structure of chemical molecules. The app implements a probabilistic optimization algorithm (Metropolis-Hasting) to find an optimal structure that minimizes the molecule's overall energy.

- Designed & implemented data structures to represent 3D structure of molecules; the custom data structures provide fast operations required for optimizing the molecular geometry
- The application is scalable and efficient; achieving constant-space & linear-time requirement per iteration (linear in number of atoms and bonds)

Classification of Microarray Data
The project involves using machine learning algorithms on Microarray to differentiate types of Leukemia Cancer. Microarray are "high-dimensional low-rank" matrices which provide a snapshot of cell/tissue status.

- Analyzed Generative & Discriminative class of ML algorithms, and identified the challenges in their use with "high-dimensional & low-sample" data
- Explored different dimensionality reduction and feature extraction techniques; compared their complexity and performance on microarray data

Sentiment Analysis of Restaurants Reviews
A java application to identify the polarity of restaurants reviews. The app is based on an unsupervised learning algorithm that works by calculating the semantic orientation of different phrases in a review.

- Designed Part-of-Speech based regular expressions to extract all "phrases" in a review
- Wrote a java package to perform efficient proximity searches on large set of text documents

ACTIVITIES

Indian Graduate Student Association, TAMU 2017 – 2018
Director of IT

- Works on day-to-day maintenance and updates of the organization's website
- Investigated organization's backup requirements and suggested Git & Rsync based solutions