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Somin Wadhwa

Contact Information

E-mail: sominwadhwa@gmail.com
Webpage: sominwadhwa.github.io
GitHub/Kaggle: /sominwadhwa
LinkedIN: /in/sominwadhwa

Education

Bachelor of Technology in Computer Science & Engineering
Maharaja Agrasen Institute of Technology — 2014 – 2018
Guru Gobind Singh Indraprastha University, Delhi, India — *CPI:* **79.2%**

Recent Experience

- **Indraprastha Institute of Information Technology, Delhi (IIIT-D)**
  Research Intern — July, 2018 - Present
  Complex Systems Lab, Center for Computational Biology — June 2017 - March 2018
  Advisor: Dr. Ganesh Bagler
  - **Current Work:** My current work focuses on creation of *"BitterSweet: A resource to explore and predict taste information in small molecules"*. (http://cosylab.iiitd.edu.in/bittersweet)
  - **Previous Work:** Pursued an internship where I worked on devising new methods to predict phenotypic side effects of drugs using existing data (SIDER4 & DrugBank). The problem was formulated as an extreme multiclass-multilabel classification problem with severe class imbalance in the datasets. The work conducted was culminated in the form of a research article (published) and the code was documented & is now open-sourced on Github (code).
- **All India Council for Technical Education (AICTE), Govt. of India**
  Research & Development Intern — October 2017 - March 2018
  Advisor: Dr. N.H. Siddalingaswamy (Director, AICTE)
  - **Work:** Lead a team of 5 with a project budget of $4600 (Rs. 300,000) sponsored by the Ministry of Human Resources Development, Government of India. We curated and analysed graduate employment statistics datasets of several years and developed dynamic analytic dashboards to aid AICTE in granting approvals to higher education institutions. (code)

Publications

- Tuwani R, **Wadhwa S**, Bagler G (2018) BitterSweet: Building machine learning models for predicting the bitter and sweet taste of small molecules. bioRxiv 426692 *(preprint)*
  doi: https://doi.org/10.1101/426692
- **Wadhwa S**, Gupta A, Dokania S, Kanji R, Bagler G (2018) A hierarchical anatomical classification schema for prediction of phenotypic side effects. PLOS ONE 13(3): e0193959
  doi: https://doi.org/10.1371/journal.pone.0193959

Selected Projects

All of my projects (including the following) are available on github.com/sominwadhwa

- **Visual Question Answering through Modal Dialogue:** A semester long B.Tech project based on the application of *Malinowski et al.* (CNN + LSTM based models) on v2 of the VQA dataset released in April 2017. I have also documented and made the entire process reproducible with a single click in the form of a featured blog post. (code)
- **Kaggle Repository:** An ongoing (2+ years) collection of kernels (implemented using IPython notebooks) designed using datasets obtained from Kaggle for practise as well as competitions. Projects in this repository demonstrate the implementation of several algorithms and data visualization techniques. (github-repo, kaggle profile)
- **TheTwitterPolice:** A basic analysis & visualization of the Indian law enforcement activity on Twitter. Collected data for different cities (BeautifulSoup & Selenium), stored them in a database (MongoDB), analysed (sentiment analysis, basic statistics etc) & displayed the results graphically through a flask web-app. (code)
- **Image Apportionor:** A simple clustering based image segmentation project. Implemented the k-means clustering algorithm, from scratch, in Python as part of the academic summer activity requirement in my sophomore year. (code)

Skills

- **Languages**: Python (proficient), Java (familiar), bash scripting, SQL, LaTeX.
- **Frameworks & Libraries**: Tensorflow, keras, PyTorch, scikit-learn, SpaCy, NLTK, Matplotlib, Plotly, MongoDB, Flask.
- **Relevant Classes Taken**: Algorithm Design & Analysis, Machine Learning, Advanced DBMS, Data Structures, Probability & Curve Fitting (Applied Mathematics-IV)

Achievements & Other Activities

- **Smart India Hackathon 2017, MHRD, Govt. of India**: Led a team of 6-members advised by Dr. Sambuddha Roy (Principal Data Scientist at Microsoft, Seattle) & **won first prize** with a total cash prize of $3000 awarded by Government of India and MAIT.
- **Best B.Tech Project**: Awarded to the top 4 major projects by the CSE department at MAIT.
- **Outstanding Achievement Award**: Conferred by the CSE department at MAIT among 180 students (batch of 2018).
- **Secretary, Association of Computing Machinary**: Served in the capacity of Secretary of 80+ strong team of ACM-MAIT Student Chapter during 2015-2016.
- **Blogging**: Maintain an active blog at *sominwadhwa.github.io/blog* to document some of my experiences & selected projects (for reproducibility).