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Somin Wadhwa

Contact Information

Undergraduate Student
Block 1, Computer Science & Engineering
Maharaja Agrasen Institute of Technology
Sector 22, Rohini
Delhi, India.

Phone: (+91) 9312349897
E-mail: sominwadhwa@gmail.com
GitHub/Kaggle: sominwadhwa
Homepage: sominwadhwa.github.io

Interests

Deep Learning, Applied Machine Learning, Statistical Data Analysis

Education

B.Tech in Computer Science & Engineering — July 2014 – present
Maharaja Agrasen Institute of Technology — (Percentage: **77.6%** as on July 2017)
Guru Gobind Singh Indraprastha University, Delhi, India

Sr. Secondary: Bal Bharati Public School, Pitampura, Delhi — March 2012 – April 2014
All India Senior School Certificate Examination, CBSE — (Percentage: **93.8%**)
Secondary School: Bal Bharati Public School, Pitampura, Delhi — March 2000 – April 2012
CBSE — (GPA: **8.8/10**)

Recent Experience

Undergraduate Researcher — May, 2017 - Present
Complex Systems Lab@ IIIT-Delhi — Principal Investigator: Dr. Ganesh Bagler
During the course of summer '17 we worked on a project involving prediction of side effects using existing data (SIDER4) by leveraging machine learning with statistical data analysis. The entire work has been consolidated, documented & open-sourced on github (drugADR).

Publications

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.
https://doi.org/10.1371/journal.pone.0193959

Selected Projects

VQAMD
A semester long project based on the Virginia Tech's VQA (Version 2). Idea is to design a CNN + LSTM based model whose outputs are passed through a fully connected followed by softmax layer to improvise the overall accuracy on v2 release of VQA. The entire methodology is documented under a blog- **Visual Question Answering through Modal Dialogue**

drugADR
An open sourced consolidated version of the work done during my Summer Internship at IIIT-Delhi. The idea behind this research project was to leverage machine learning to predict phenotypic side effects of drugs using their chemcical properties.

Kaggle-Repository*
A collection of kernels (written in IPython Notebooks & scripts) designed from datasets obtained from Kaggle for practise as well as competitions. These include implementations of typical Machine Learning algorithms on a range of datasets.

TheTwitterPolice
Analysis of law enforcement activity on Twitter in India. Collected data from five different police social handles (BeautifulSoup & Selenium), stored them in a database (MongoDB), analysed (sentiment-analysis, time-series etc) & displayed the results graphically in the form of a web-app (flask application deployed on heroku).

Image Apportionor
A simple clustering based image segmentation in Python. Implemented k-means clustering for segmentation & achieved a compression ratio of approximately 6.

**Ongoing*
All my projects (above included) are be available on GitHub

Technical Skills

Strongest Areas: Machine Learning (Classification, Regression, Feature Engineering), Algorithms, Statistical Data Analysis
Languages/Tools/Software: Python (scikit-learn, Keras, NumPy, Pandas & others), Java, SQL, MongoDB, LaTeX, MS Excel

Other Activities	• Won Smart India Hackathon (April 2017) I was the Team Lead of a six-member team under the mentorship of Dr. Sambuddha Roy over a period of three months to build a decision support system using Machine Learning to improvise AICTE's handbook approval system for technical institutions in India for SIH – 7200+ teams pan India competed in a 36-hour Hackathon organised by Government of India. As a part of the winning team for AICTE, I'm associated with All India Council for Technical Education (Ministry of Human Resources & Development, Government of India) in a fully funded project (**Budget: 2.93L**) for taking our prototype forward over the period of 6-8 months beginning October 2017. • **Secretary**(2015-2016) 'Association of Computing Machinery (ACM)- Student Chapter' at M.A.I.T • **Presentation** Gave an oral talk on, "Study of Random Numbers & their applications in computational physics using Monte-Carlo method" at the 27th IUPAP Conference on Computational Physics, **IIT Guwahati** on 2-5 December, 2015. • **Interned** at a national NGO 'Umeed - A drop of Hope' (NGO Reg: S/792/DIST.SOUTH/201) and participated in Project- Knowledge for All (KFA). • **Rotaractor** (2014-2015) Member of 'Rotaract Club of Delhi Akash' where our team jointly organized several large scale events like 'CanSupport's Walk of Life (8th Feb 2015) - Fight against cancer.', 'Patrika - A paper recycling drive.'
Relevant Courses Taken	Algorithms, Data Structures, Databases, Machine Learning (MOOC), Automata Theory, Theory of Probability, Differential & Inferential Statistics (Applied Math-IV), Software Engineering
Hobbies & Interests	Reading, Blogging, Basketball, Running.
References	Available upon request.