VIBHOR AGARWAL

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Github, Linkedin, Twitter, Medium

EDUCATIONAL QUALIFICATIONS

Year	Degree/Certificate	Institute/School	CGPA / %
2020	B.Tech. - Computer Science & Engineering	The LNM Institute Of Information Technology, Jaipur, Rajasthan, India	9.45/10
2016	Class XII (CBSE Board)	Shivedale Public School, Haridwar, Uttarakhand, India	90.8%
2014	Class X (ICSE Board)	Swami Hariharanand Public School, Haridwar, Uttarakhand, India	93%

PUBLICATIONS

· Vibhor Agarwal: Poster on '**Video Surveillance System for Female Security using Keras**'; **PyCon US** 2020, PA, US.

· Vibhor Agarwal, Yash Vekaria, Pushkal Agarwal, Shounak Set, Sangeeta Mahapatra, Sakthi Balan, Nishanth Sastry, Nicolas Kourtellis: **Under the Spotlight: Web Tracking in Indian Partisan News Websites**; Submitted to **The Web Conference (WWW' 21)**.

  · Collected the dataset of traffic information using OpenWPM for the Indian news websites.
  · Implemented various Privacy Metrics such as Canvas Fingerprinting, Cookie Syncing, Invisible Pixels.

· Nirmal Sivaraman, Vibhor Agarwal, Yash Vekaria, and Sakthi Balan: **Hypothesizing "Peak + Herd = Event": A Meta-Data based Event Detection Method in Twitter using Temporal Herding Factor**; Submitted to **WSDM 2021**.

  · A research project to analyse and detect social synchronies from the **tweets** and thereafter, detect online events from these detected synchronies on Twitter dataset.
  · A **social synchrony** is a social phenomenon where many people perform a **similar action** in unison over a short period of time during which the number of people who perform the action first **increases** and then **decreases**.
  · Dataset used: **time-series** dataset of tweets on daily basis with the twitter username who tweeted it and its retweet information collected using Twitter API.

AWARDS & ACHIEVEMENTS

· Awarded **PyCon US 2020 scholarship** to attend the largest Python Conference in the world and present my poster titled, "Video Surveillance System for Female Security using Keras".
· **Quarter finalist** in **India Innovation Challenge Design Contest' 2018** organised by Department of Science and Technology and IIM Bangalore for our robust 'Pro-active Video Surveillance System'.
· Awarded **Meritorious Certification** and **Scholarship** for securing position in top **1 percentile** at LNMIIT, Jaipur.
· Awarded **Certificate of Appreciation** for **Google Summer of Code' 18** at LNMIIT, Jaipur.
· Earned **Silver Medal** at **State level** Mental ability competition (**Abacus**).

INTERNSHIPS / PROJECTS

Media.Net (Directi) | Site Reliability Engineer   *(Jan' 20 - Present)*
  · Media.Net is a leading contextual advertising tech company.
  · During the six months internship (Jan-Jul' 20), I did lots of projects. The largest among them was to optimise the Machine Learning pipeline of a Keyword Recommender model and integrate it with TensorFlow Extended.
  · The Keyword Recommender model, using the context of a webpage, suggests keywords for which ads can be shown on the webpage.

Google Summer of Code' 2018 | The Oppia Foundation (Github)   *(May'18 - Aug'18)*
  · Selected as GSoC Student Developer at Oppia and was later a maintainer of the project.
  · Aims at building interactive platform for both lesson creators and learners and brings learning freely available in the effective, interesting and story telling way.
  · Implemented two new interactions- 'Number with units' and 'Drag and drop sort' to enhance the learning experience of the students and help creators in making effective lessons.
  · **Technologies** used - JavaScript (AngularJS, JQuery) and Python.

Video Surveillance System for Female Security | Department of Science and Technology (DST)
                    Dr. Preety Singh, HoD, Dept. of CSE, LNMIIT *(Jan'19 - Dec'19)*
  · This research project was part of **India Innovation Challenge Desssign Contest' 2018** organised by DST, **Govt. of India** in collaboration with **IIM Bangalore**. Our team was selected out of **10146 teams** for the contest.
  · Aims at **pro-actively** detecting **suspicious activities** like **molestation** against women and automates the current manual Surveillance process to enhance the security standards for women in the society.

- Uses **hybrid neural networks** containing stacked Convolutional Neural Networks and Long Short Term Memory Networks sequentially to capture **spatial** and **temporal** information from the live video streams.
- **Hardware** used is **Beaglebone black** as a **micro-processor** along with **CCTV cameras** to process frames and predict suspicious activities in real-time.

Neural Machine Translation using Keras ([Github](#)) *(Sep' 18)*
- Implemented a **sequential Encoder-Decoder Long Short Term Memory** Networks based model to translate the input text in German to its corresponding English text.
- Used **Bilingual Evaluation Understudy** (**BLEU) score** as an evaluation measure against the reference sentences in the test set.

Text Document Ranking and Summarisation based on Search Queries. *(Aug' 18)*
- Firstly, 200 documents were scraped from Google using 10 search queries to collect the dataset.
- **Pre-processing** techniques applied: case-folding, stop-words removal, stemming etc. and then, using **TF-IDF** method, each document is converted in its vector form.
- Documents were **ranked** based on their **similarities** with the search queries. **Similarity metrics** used: **Cosine Similarity** and **Jaccard Coefficient**.
- Documents were **summarised** by first finding similarity among the sentences and document titles to extract the top 5 sentences having the highest similarity with the title and having keywords in the document.

TECHNICAL SKILLS

- **Programming Languages:** Python, JavaScript, C, Java, MATLAB
- **Artificial Intelligence:** Machine Learning, Deep Learning, Computer Vision, NLP
- **Tools:** Keras, TensorFlow, scikit-learn, Numpy, Pandas, Matplotlib and Seaborn
- **Frameworks:** Flask (Python), AngularJS, ReactJS, Electron and Node.js (JavaScript)
- **Database:** MySQL, SQLite and MongoDB and Redis (NoSQL)
- **Version control:** Git and Github
- Data Structures and Algorithms

OPEN SOURCE

Data Version Control (DVC) | [Github](#) *(Jul'19 - Nov'19)*
- DVC is an **open-source version control** for Data Science and Machine Learning projects.
- Mainly contributing to the technical documentation of the project and also making bug fixes in the code.

The Oppia Foundation | [Github](#) *(Sep'17 - Jul'19)*
- Contributed to this great Google's open source project for almost two years.
- Was part of core developer's team, implemented new features and helped new Geeks in getting started with the basics. Was also a **maintainer** keeping track of the Pull Requests.

POSITIONS OF RESPONSIBILITY

Data Science Lead| Computer Society of India (LNMIIT Chapter)
Computer Society of India (CSI) is the first and the largest body of computer professionals in India.
- Guided beginner 1st and 2nd year students in accomplishing the projects related to Data Science.
- Conducted various workshops and time-to-time talks related to state-of-the-art algorithms in ML and Data Science.

Google Code-In' 2018 Mentor
- Selected as the mentor in GCI' 18 programme to guide school students to contribute in open source projects under **JBoss (RedHat)** organization.
- Developed medium and advanced level tasks on Github for learning of the school students.

Teaching Assistant   Advanced Programming Lab, LNMIIT
- Helped the students of 3rd semester in learning OOPs concepts with Java.
- Evaluated them in their weekly assignments and semester examinations.

Teaching Assistant   Data Structures and Algorithms Lab, LNMIIT
- Helped the students of 2nd semester in learning Data Structures and Algorithms with C programming language.
- Evaluated them in their weekly assignments and semester examinations.