

# Sarvasv Arora

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## EDUCATION

### McGill University | GPA: 4.0

Montreal, QC

*Bachelor's Degree in Computer Science, Minor in Statistics*

*Sept. 2020 - Dec. 2023*

- Relevant courses: Machine Learning, Honors Math for ML, Honors Linear Algebra, Programming Languages and Paradigms, Honors Algorithm Analysis, Calculus 3, Probability, Intro to Software Systems, Microeconomics
- James McGill Prestige Scholarship (highest valued), Deans Honor List (top 10% academic standing in faculty).

## TECHNICAL SKILLS

**Languages:** Python, C/C++, Java, OCaml, JavaScript, HTML, CSS, L<sup>A</sup>T<sub>E</sub>X, MIPS32 Assembly

**Frameworks:** PyTorch, TF/Keras, Flask, FastAPI, Jekyll

**Developer Tools:** Git, Bash/Zsh, Google Cloud Platform, GNU tools

**Libraries:** pandas, NumPy, Plotly/Matplotlib, scikit-learn

## EXPERIENCE

### Undergraduate Research Assistant

June 2021 - Present

*Data Mining and Security Lab, McGill University*

*Montreal, QC*

- Research on the application of deep learning NLP methods in the domain of authorship analysis.
- Updated the old ICWSM12 Twitter dataset to a new custom dataset with millions of tweets, scraped using twint and scweet libraries, and the Twitter API.
- Working on re-engineering the StyloMatrix project's existing codebase from Java to PyTorch (Python), thereby making it possible to incorporate the latest developments in NLP into the project.

### Course Assistant

Sept. 2021 - Dec. 2021

*Dept. of Computer Science, McGill University*

*Montreal, QC*

- Facilitate office hours, grade assignments and exams, monitor discussion boards, and attend bi-weekly TA meetings for the Intro to Software Systems course, having over 400 students.

### SPARK Research Intern

May 2021 – June 2021

*IIT Roorkee*

*New Delhi, India*

- Guided the previous research of bit-flip attack on image classification models to the under-explored domain of NLP models like LSTM, BERT and RoBERTa by developing custom model layers and reformulating the existing code for the attack.
- Refined the attack dynamics, further speeding up the attack by as much as 15-20% in some cases.

### Bootcamp participant

Jan 2021 – April 2021

*McGill AI Society*

*Montreal, QC*

- Developed a sarcastic comment generator using GPT-2, deployed as a Discord bot using the Discord API.
- Implemented VGG-16 architecture for the capstone Kaggle image classification competition, while also empowering my teammates as the most experienced person on the team. Ended up getting the runners-up position.

## PROJECTS

### 🔗 SummarizeYT | Python, GCP, Gensim, JavaScript, Chrome Developer Tools, Google Cloud Function

- A Chrome extension, which activates when the user plays a video on YouTube, and displays the summary of the video by scraping the captions file and passing it to a Python script hosted on Google Cloud Function.
- Coded the backend of the extension using JSON, Gensim library and the Google Natural Language API.

### 🔗 PathLink | Python, Streamlit, pandas, Plotly, scikit-learn

- Machine Learning powered web app that allows automated group formation based on students' preferences like skill level, time-zone and areas of interest almost instantly, thereby saving instructors' time while also maximizing group chemistry. Also includes interactive data visualizations that dynamically change according to the groups.
- Built the fully functional web-app as the only person on team to know programming, while also taking the initiative to teach Python programming to one of my teammates.

### 🔗 Beek-It | Java, Python, XML, Data Structures

- A model search engine implementing a simplified version of Google PageRank algorithm and works on XML-based "pseudo-internet." Originally a class project, redesigned to include additional features such as a keyword search.
- Wrote a [blog post](#) about the working of search engines and this project in detail.

## AWARDS AND ACHIEVEMENTS

- 97.8 percentile (99.6 in Chemistry) in JEE, biggest engineering entrance exam in India (over a million participants).
- 19<sup>th</sup> International rank in National Cyber Olympiad (SOF and Tata Consultancy Services), 2019
- 27<sup>th</sup>/20,000 in Junior Science Talent Search Examination (Govt. of Delhi), 2017
- High Distinction at Australian National Chemistry Quiz (Royal Australian Chemical Institute), 2016