

JIVJOT SINGH

Ludhiana, Punjab

+91-6283-274892 | 121jsingh@gmail.com | github.com/SinghJivjot | linkedin.com/in/jivjot-singh16 | jivjotsingh

PERSONAL PROFILE

An IISER Mohali Physics graduate student with a specialization in Data Science, transitioning to a career as **Machine Learning Researcher**. Currently focused on applying **Natural Language Processing** techniques to generate strategic insights. Passionate to expand the one year experience in Machine Learning & combine it with **Astrophysics** to leverage my skills & knowledge for positive societal change.

WORK EXPERIENCE

Indian School of Business

Research Intern @ Institute of Data Sciences

Mohali, India

Jun 2023 - Present

- Working on **Multi-lingual Code-mixed** seeded translation using AI4Bharat base libraries
- Operating within a dynamic Big Data environment, leading **Data Mining** of news articles from the last century
- Harnessing the power of GPU computations to perform **Topic Modelling** through Latent Dirichlet Allocation & Transformers

Tatras Data

Project Intern

Mohali, India

May 2023 - Jun 2023, 2 months

- Scraped social media handles of Political leaders to perform **Sentiment Analysis**
- Facilitated the identification of small to medium-scale food influencers within specific geographies by **scraping Instagram** using Selenium
- Fine-Tuned Keras models like **ResNet50**, achieving accuracy of 97.36% on classifying Food-vs-NonFood images to enhance filtering

Sabudh Foundation

Data Science Intern

Mohali, India

Jan 2023 - Jun 2023, 6 months

- Seasoned with Data Structures & Algorithms, **Machine Learning**, Deep Learning & **Natural Language Processing**
- Excelled in **Kaggle competitions**: Frame Level Speech Recognition & BBC Document Classification
- Built a **Medical Chatbot** powered by RASA & Python as part of the Passion Project with the presentation delivered through Quarto

UNIVERSITY PROJECTS

Speech Recognition

Indian Institute of Science Education and Research, Mohali

Mohali, India

Mar 2023 - Apr 2023, 1 month

- Thoughtfully devised **Sequence models** using non Recursive Nets making use of residual connections to classify at a frame level
- Engineered **feature-expansion** approaches by parameterizing temporal context through customizing TensorFlow generators
- Constructed Dense and Convolution Deep Residual Networks by combining **Functional, Sequential & Sub-classing** methods

Multi-Layer Perceptron using NumPy

Indian Institute of Science Education and Research, Mohali

Mohali, India

Feb 2023 - Mar 2023, 1 month

- Successfully created an **Object-Oriented code base** that implements the complete architecture of MLP from scratch
- Coded different methods of weight initializations & activations alongwith **Stochastic Mini-batch Gradient Descent with momentum**
- Tested on the MNIST data which resulted in **98.00% validation accuracy** using a deep architecture

IPL batting partnership Network Analysis

Indian Institute of Science Education and Research, Mohali

Mohali, India

Sep 2022 - Oct 2022, 1 month

- Aggregated the partnership statistics by **Web Crawling** the ESPN website
- Built dynamic **Network Graphs** to rank key players based on various Centrality measures
- Discovered that the IPL batting Network is very weak Dis-assortative type using the Average Nearest Neighbor Degree results

SKILLS

Data Science

Python, Probability, Statistics, Linear Algebra, Calculus, Data Structures & Algorithms, Data Mining

Libraries

Selenium, BeautifulSoup, NumPy, Matplotlib, Plotly, Pandas, Scikit-learn, RegEx, TensorFlow, Keras

Machine Learning

Bayesian Learning, Gaussian Models, Regressions, Supervised & Unsupervised Learning, Clustering, Dimensionality Reduction, Latent variable models, Deep Learning

Natural Language Processing

Vector Embedding, Feature Engineering, Topic Modelling, Text Classification, Sentiment Analysis, Speech Recognition, Translation, Transliteration, Chatbot

Miscellaneous

LaTeX, Git, Linux, Microsoft Office, Quarto

Soft Skills

Research, Adaptability, Time Management, Multitasking, Problem-solving skills, Documentation Presentation skills, Logical & Critical Thinking, Teamwork, Creativity

MASTERS THESIS

Dissertation: Multi-wavelength analysis of the NGC 3227 group using AstroSat

Mohali, India

Indian Institute of Science Education and Research, Mohali

May 2022 - Apr 2023, 5 yrs

- Conducted **statistical analysis** on astronomical sources extracted from AstroSat-UVIT's image of galaxy NGC 3227
- **Designed code** implementing an innovative approach for distinguishing faint objects between Point sources & Extended objects
- **Discovered an exciting Tidal Dwarf Candidate**, exclusively observable in the AstroSat data of the Far Ultraviolet band
- Effectively communicated the findings to the Thesis committee through results showcased in **Poster, PowerPoint & \LaTeX presentations**

EDUCATION

Indian Institute of Science Education and Research, Mohali

Mohali, India

BS-MS with Major in Physics & Minor in Data Science

Aug 2018 - May 2023

- **Relevant Courses: Python programming**, Analysis in one variable, Introduction to Cryptography, **Probability & Statistics**, Math methods for physicists, Statistical Mechanics, Non-linear dynamics, **Data Science, Machine Learning, Design & analysis of algorithms**

Sacred Heart Senior Secondary School

Ludhiana, India

High School

Mar 2016 - Apr 2018

- **Subjects:** Physics, Chemistry, Maths, English & Fine Arts

ACHIEVEMENTS

2023	Elite , Design & Analysis of Algorithms NPTEL Exam	India
2018-19	Volunteer , Physics experiments demonstration @ IISER Mohali Foundation Day	India
2016	Winner , Radiometer Construction @ Science Exhibition	India

INTERESTS

Art	I dedicate my free time to painting and sketching as a form of artistic expression.
Technical Writing	I began posting on LinkedIn where I combine GitHub-hosted IPython Notebooks with digital notes on ML

LANGUAGES

English	Professional proficiency
Punjabi, Hindi	Native proficiency

REFERENCES

Dr. Sarabjot Singh

Co-founder & Chief Data Scientist @ Tatra Data & Sabudh Foundation
ssanand@tatra-data.com

Prof. Kulinder Pal Singh

FASc, FNASc, FNA; INSA Sr. Scientist @ IISER Mohali
kps@iisermohali.ac.in