

# Iknoor Singh

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## About Me

I hold a PhD in Computer Science with expertise in AI, NLP, and machine learning. I have a proven track record of delivering cutting-edge solutions and training LLMs to solve complex problems and drive real-world impact.

## Education

### Doctor of Philosophy, PhD - Computer Science

University of Sheffield, Sheffield, United Kingdom

- Award: Fully-funded PhD Doctoral Scholarship

### Bachelor of Engineering with Honours - Information Technology

Panjab University, Chandigarh, India

- Award: Undergraduate Scholarship

## Technical Skills

**Languages:** Python, C/C++, JavaScript, Groovy

**ML/DL/AI Libraries:** Scikit-learn, Transformers, TensorFlow, Keras, PyTorch, Sentence-Transformers, OpenAI API

**Data Analysis:** Pandas, Matplotlib, Seaborn, NumPy, SciPy, BeautifulSoup, Scrapy, Pillow, OpenCV, ElasticSearch

**Web Dev and Deployment:** HTML, JavaScript, Bootstrap, ReactJS, Gradio, Flask, StreamLit, Huggingface Endpoints

**Operating Systems and Tools:** Unix/Linux, AWS, Sagemaker, S3, EC2, MinIO, Git, JIRA, ASANA Work Management

## Experience

### Natural Language Processing (NLP) Group, University of Sheffield, UK

Mar 2022 – Present

Research Associate with GateNLP team

Sheffield, UK

- Contributed to multiple projects within a European Union-funded research initiative, including the development of information retrieval and machine learning models for misinformation detection, the creation of a Chrome plugin, and the maintenance of various GATE cloud services. Also, delivered advanced tools to support fact-checkers.

### Amazon, London, UK

Sept 2022 – Dec 2022

Applied Scientist Intern (L5) with Alexa Knowledge SLU Team

London, UK

- Developed novel methods for generating and evaluating topical utterances, involving fine-tuning of large language models (LLMs) and utilizing Generative AI (Gen AI) on Amazon AWS.
- Contributed to the enhancement of team capabilities in natural language understanding and generation.

### University of Sheffield, UK

Jan 2020 – July 2020

Visiting Researcher with Carolina Scarton and Kalina Bontcheva

Sheffield, UK

- Led the development of an end-to-end data science pipeline, encompassing problem definition, data scraping, exploratory data analysis (EDA), modelling, insights, and visualizations. This contributed to the successful development of a COVID-19 disinformation classifier, providing critical insights during the global crisis.

### IBM Research Lab, India

June 2019 – Sept 2019

Research Intern with Sumit Bhatia

Delhi, India

- Pioneered the creation of a political ideology detection corpus using data scraping.
- Did exploratory data analysis to visually compare the sentiment scores of news articles with different biases and partisanship. This project was undertaken as part of IBM Global Remote Mentoring.

### Queen's University Belfast, Northern Ireland, UK

Jan 2019 – May 2019

Research Intern with Deepak Padmanabhan

Belfast, UK

- Implemented cutting-edge computational formulations of textual coherence using deep learning methods.
- Analyzed the coherence of fake news articles, contributing to the understanding of disinformation dynamics.

### Ministry of Human Resource Development (MHRD), India

June 2018 – Dec 2018

Summer Intern with Naveen Aggarwal

Chandigarh, India

- Implemented an end-to-end text preprocessing pipeline for the low-resourced Punjabi language.
- Applied machine learning for clustering and plagiarism detection, directly benefiting Punjabi-speaking universities.

## Personal Projects

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### **Automated Subjective Answer Assessment App** | *Python, Semantic Similarity*

- Developed an innovative app for automated subjective answer assessment, leveraging semantic similarity for accurate marking against a comprehensive answer database.
- Secured **1st prize** in an international-level hackathon conducted by IIT BHU.

### **Crime Mapping and Prediction** | *Supervised Machine Learning, Algorithm Optimization*

- Devised a safety-constrained algorithm for calculating the safest optimal path and implemented a supervised machine learning model predicting crime occurrences.
- Secured **3rd prize** out of 130+ teams in a national-level hackathon organized by Nagarro.

### **Search Through Video** | *Python, Video Analysis*

- Developed a Python-based app for searching specific sub-topics within videos, enabling users to find the exact timestamp when a sub-topic is discussed without manual searching.
- Secured **1st prize** in a hackathon conducted by Panjab University, Chandigarh.

## Responsibilities and Awards

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- Tutored **100+** students as a **Teaching Assistant** for Text Processing modules COM4115 and COM6115 at the Department of Computer Science, University of Sheffield, UK (Fall 2021 semester).
- Got selected as **LxMLS Monitor** to tutor students during the lab sessions of the **Lisbon Machine Learning School**.
- **Reviewer** at multiple conferences including ICWSM, ACL, EMNLP, AAAI etc.
- Got selected for an **Undergraduate Scholarship** for working on a research project as a part of a research collaboration between Panjab University, India and King Abdulaziz University, Saudi Arabia.
- One among **120** students in India who got selected for the **Microsoft Student Partner program**.
- Team lead at **AIESEC**, the world's largest youth-run organisation associated with the **United Nations**.
- Got **24th** rank in India in Code-n-counter competitive programming conducted by HackerEarth.
- **Shared Task Organiser** of Interactional Affect (The OffMyChest Shared Task) at the third Affective Content Analysis workshop@AAAI 2020 together with Adobe and the University of Pennsylvania.
- One among four students who represented my school at the **International CBSE Summit 2014**.
- Active member of SOREM society (NGO), a Society for Rehabilitation of Mentally Challenged where I have been involved in various social events including **teaching** and **helping** disabled children.