

# KAMAL SHRESTHA

M. Tech. CSE '023, Indian Institute of Technology Hyderabad (IITH)

✉ kamalandshrestha@gmail.com  
🌐 shresthakamal

📍 Hyderabad, India  
🌐 kamalshrest

☎ (+91) 7893887563  
💻 shresthakamal.com.np

## SUMMARY

- Possess a comprehensive theoretical and practical foundation in machine learning and natural language processing, combined with hands-on experience in research and experimental design methodologies.
- Proficient in executing the deep learning pipeline encompassing various stages such as data analysis, data cleaning, pre-processing, model design, training, and model evaluation, primarily utilizing PyTorch, Scikit-learn (Sklearn), and other scientific Python libraries to achieve optimal results.
- Demonstrate excellent teamwork, communication, and writing skills honed through previous industry experience, research publications, poster presentations, and teaching engagements
- **Research Interests:** Intersection of applied NLP, DL, and Classical ML Techniques

## WORK EXPERIENCE

### BOSCH Global Software Technologies(BGSW), RTC-IN

*Senior Applied Data Scientist*

Bengaluru, India

*August 2023 – Present*

- Currently working with in-house text data that involves creating multiple streamlined pipelines and applications of state-of-the-art models for production-ready text generation to drive tangible results in diverse business units.
- Working on a high-impact project centered on leveraging Large Language Models (LLM) that customize production-generated datasets and introduce interactive agents to streamline workflows, significantly enhancing operational efficiency.

### Fusemachines

*Machine Learning and Curriculum Engineer*

Kathmandu, Nepal

*July 2020 – Dec 2021*

- Worked with multiple clients & in-house projects at all stages of applied ML, DL, & NLP on real-world data
- Remodeled and optimized **Questions Answering and Difficulty Ranking Model** with better representations, raking, and recommendations for quizzes, assignments, and exams using fine-tuned Transformer(BERT), Ensemble models, Elastic Search, MongoDB, and Flask.
- Worked as a **lead curriculum engineer** to design, create, review, and refine numerous course materials (reading materials, slides, audio transcripts, graded assignments, hands-on implementations, and quizzes).

### Q. I. Roberts Jr-Sr High School & Herald International College

*Computer Science Instructor*

Florida, USA & Kathmandu, Nepal

*June 2021 – Dec 2021*

- Designed, implemented and instructed **daily lesson plans, coding sessions, and lectures** catering to high school students of USA and undergraduate BSc.CSIT final year students of Nepal.
- The course topics include Introduction to AI, Fundamentals of CS, Python Programming, Scientific Python (Numpy, Pandas and Matplotlib), DSA, Database, and Web Application Basics.

## EDUCATION

### M. Tech. in Computer Science and Engineering, CGPA: 9.06/10

Indian Institute of Technology, Hyderabad (IITH)

*Aug 2021 – July 2023*

*Hyderabad, India*

**Advisor:** Dr. Maunendra Sankar Desarkar, NLIP Lab

**Area of focus:** Recommendation Systems and Hostility detection on online social media conversation threads

**Relevant Courses:** NLP, Information Retrieval, DL, Fundamentals of Machine Learning, Software Engineering.

### Bachelors in Computer Engineering, Percentage: 92.30%

Kathmandu University (KU)

*Aug 2016 – Nov 2020*

*Dhulikhel, Kavre, Nepal*

**Relevant Courses:** Artificial Intelligence, Data Structures and Algorithms, Algorithm and Complexity, Software Engineering, Probability and Statistics, Machine Learning, Speech and Language Processing, C, C++

## PUBLICATION

---

Aditi Bagora, **Kamal Shrestha**, Kaushal Kumar Maurya, and Maunendra Sankar Desarkar. 2022. Hostility Detection in Online Hindi-English Code-Mixed Conversations. In Proceedings of 14th ACM Web Science Conference 2022 (WebSci '22). ACM, New York, NY, USA, 11 pages doi: 10.1145/3501247.3531579

**Shrestha, K.** , Poudyal, P. , Karki, J. , Ranabhat, D. (2022). A Machine Learning Approach to Identify Fake News. Center for Project Management and Information Systems (PMIS) Review, 1–13.  
<http://journal.pmis.du.ac.bd/journaldetails.php?pid=2203281648465920>

## TECHNICAL SKILLS

---

<b>Programming Languages</b>	Python, C, C++, PHP, HTML, CSS, Bootstrap, SQL
<b>Libraries</b>	Pytorch, Hugging Face Transformers, Scikit-Learn, Keras, Pandas, Numpy, SciPy, Matplotlib, Flask, Docker, Jupyter, Loguru, Poetry, NLTK, Open-CV
<b>Management</b>	Git, Github, JIRA, HRM Suite, Trello, Notion, Slack
<b>Miscellaneous</b>	Linux, Bash, Arduino, Anaconda, Latex, Tensorboard, SSH, nbgrader

## RESEARCH EXPERIENCE

---

**Natural Language and Information Processing Lab (NLIP)** IIT Hyderabad  
*Academic 'C' Block, IITH* May 2022, July 2023

- Developed personalized odd jobs recommendation engine based on heuristics and learning-based approaches for a platform catering to differently able individuals with skills and training.
- Implemented SOTA models to enhance the representation of in-turn conversational history, resulting in improved accuracy, diversity, and human-like responses in dialogue systems.
- Presented a novel hierarchical neural network architecture proposal for the identification of hostile posts, comments, and replies in online Hindi-English Code-Mixed conversations as a participant in HASOC'2021.

## PROJECTS

---

**Inclusivity in Job Recommendation based on heuristic and learning approaches** IIT, Hyderabad  
*M. Tech. Thesis* May 2022 – July 2023

- Developed a hybrid recommendation engine based on heuristics and transformer learning approaches for a personalized recommendation based on disability, skills, and preferences.
- Attained an impressive F1 score of 0.9389 on the validation set and 65% accuracy on similar user analysis from human feedback with minimal space usage and low latency in recommendations

**Federated Semi-Supervised Medical Image Classification** IIT Hyderabad  
*Dr. C. Krishna Mohan, Visual Computing, CS6450* April, 2022

- Remodeled and evaluated **medical image classification** with the novel addition of Self Attention mechanism in every convolutional block: using CBAM to obtain better classification results.
- Ranked with the best **Top 2%(A+) of the class** on the basis of two project presentations.

**A Machine Learning Approach to Identify Fake News** Kathmandu University  
*Semester Project, Dr. Prakash Poudyal* June, 2020

- Focused on applying NLP sentence classification to generate contextual sentence representations passed over classical machine learning classification heads to predict whether the provided sentence is fake or not within a degree of confidence.
- Evaluated using **lexical/syntactical/grammatical/factual features** based only on raw text and **semantic features** based on contextual representations with attentive weights.

## AWARDS AND ACHEIVEMENTS

---

<b>Dr. Homi Jahangir Babha Scholarship Scheme-HJBSS. Fully Sponsored by Ministry of External Affairs, Government of India</b> with EdCIL and provided by the Embassy of India, Nepal to study M.Tech in Computer Engineering at IIT, Hyderabad.	<i>2021 – 2023</i>
<b>Fuse Machines Artificial Intelligence Fellowship Program.</b> 1 of 15 recipients in 2,000+ applications for Micro Degree™ in Machine Learning and Deep Learning, worth <b>NPR 58,000 each</b> [1][2].	<i>2019 – 2020</i>
<b>Kathmandu University Merit-based scholarship (2x).</b> 1 out of 60, awarded for securing the highest SGPA in Computer Engineering in the 2 <sup>nd</sup> and 6 <sup>th</sup> semesters, respectively.	<i>2016, 2017</i>