Talika Gupta

Linkedin: talika-gupta
Github: github.com/talikagupta

Email: talika.gupta2002@gmail.com
Mobile: +91-720-8242-248
Website: talikagupta.github.io

EDUCATION

Indian Institute of Information Technology Guwahati — Guwahati, India
Bachelor of Technology - Computer Science; GPA: 9.85/10, Rank: 1/184 — *December 2020 - June 2024*

Shri T P Bhatia College of Science — Mumbai, India
Higher Secondary Certificate (HSC), 12th; 91.3% — *April 2018 - March 2020*

RBK School — Mumbai, India
Indian Certificate of Secondary Education (ICSE), 10th; 96% — *April 2004 - March 2018*

PUBLICATIONS

- **Talika Gupta**, Hans Ole Hatzel, Chris Biemann, **"Coreference in Long Documents using Hierarchical Entity Merging"**, SIGHUM Workshop on Computational Linguistics for Cultural Heritage, Social Sciences, Humanities and Literature (LaTeCH-CLfL), 2024 (under review).

- **Talika Gupta**, Srinibas Swain, **"Hybrid Approach to Twin-width by Taming Red (HATTER): A heuristic solver for finding twin-width of an undirected graph"**, Latin American Theoretical Informatics (LATIN), 2024 (under review).

RESEARCH EXPERIENCE

University of Hamburg — Hamburg, Germany
Research Intern, Language Technology Team, Supervised by Dr. Chris Biemann — *May 2023 - August 2023*

- Developed and implemented a novel approach for Coreference Resolution on long documents, by exploiting the divide and conquer strategy.
- Achieved near state-of-the-art (SoTA) CoNLL F1 score on Litbank dataset and German texts like "Der Blonde Eckbert" and "Effi Briest", while being considerably more memory efficient than the SoTA.

International Institute of Information Technology Hyderabad — Hyderabad, India
Research Intern, Computer Vision Lab, Supervised by Dr. Sudipta Banerjee — *May 2022 - June 2022*

- Implemented a novel classification tool to detect DeepFakes by utilizing Transfer Learning.
- Extracted features from DeepFake videos using SoTA pre-trained models like VGG and ResNet trained on ImageNet and then fitted the extracted features into a hypergraph convolutional neural network for classification.

TEACHING EXPERIENCE

Indian Institute of Information Technology Guwahati — Guwahati, India
Teaching Assistant, CS301:Theory of Computation, Instructor: Dr. Srinibas Swain — *August 2023 - November 2023*

- Responsible for preparing and conducting tutorial sessions.
- Helped in proofreading the examination papers.

SELECTED PROJECTS

Hybrid Approach to Twin width by Taming Red (HATTER)
Supervised by Dr. Srinibas Swain, [Github], [Report], [Slides]

- Developed and implemented one of the state-of-the-art heuristic algorithms in C++ for the Parameterized Algorithms and Computational Experiments (PACE) Challenge 2023 [link], on computing the twin width of graphs, an NP-complete problem.
- Our solver achieved a World Rank 4, Student Rank 2 [results] in the heuristic track, and a paper has been submitted.

Reinforcement Learning based Service Recommendation framework without QoS prediction
Supervised by Dr. Soumi Chattopadhyay, [Report] [Slides]

- Proposed an RL-based service recommendation framework and designed a suitable reward function for the model.
- Unlike traditional methods, it leverages temporal information from the WS-DREAM dataset and directly predicts optimal services for users instead of the Quality of Service (QoS) score.

TECHNICAL SKILLS

- **Languages:** C, C++, Python, JavaScript, Java
- **Frameworks:** NodeJS, Flask, Django, MongoDB, TensorFlow, PyTorch
- **Tools:** Git, MySQL, LaTeX
- **Data Mining:** Spark, Hadoop
- **Platforms:** Linux, MacOS, Windows, AWS, Docker

Scholastic Achievements

- Institute Rank 1, IIIT Guwahati in every semester (till the current semester).
- Received the DAAD Scholarship 2023 which is awarded to only 150 undergraduates all across India.
- Achieved a World Rank 4 and Student Rank 2 in the PACE Challenge 2023 among 73 teams across 3 continents.
- Received Adobe India internship offer for summer of 2023.
- All India Rank 2/1000 in the Lady Ada Programming Contest 2022 hosted by ACM-W India.
- Received the Bank of Baroda Scholarship 2023 for Outstanding Academic Achievement at IIIT Guwahati.
- All India Rank 189/100k in the final round of Innovate India Coding Championship (IICC) organized by AICTE.
- Selected for Google Machine Learning (ML) Bootcamp 2022.
- Selected for Amazon ML Summer School 2022.
- Qualified among the Top 2% of JEE Main examination 2020 among 1 million students.
- Qualified Pre-RMO (Regional Mathematics Olympiad) in 2018.

Volunteer Experience

- ML Lead at Google Developer Student Club - IIIT Guwahati for the fifth semester. Responsible for giving talks on the fundamentals of ML to the Machine Learning club at IIIT Guwahati.
- Mentored four freshmen, assisting them in navigating their first year.
- Taught mathematics to underprivileged girls at the Ankur Children's home once every week in the summer of 2018.

Relevant Coursework and Certifications

- **Computer Science**: Data Structures, Algorithms, Theory of Computation, Graph Theory, Machine Learning, Artificial Intelligence, Natural Language Processing, Operating Systems, Cloud Computing, Computer Networks, Computer Security, Database Management, C Programming, Compilers, Software Engineering, Data Analytics.
- **Mathematics**: Discrete Mathematics, Probability Theory and Stochastic Processes, Calculus, Linear Algebra, Differential Equations 1 & 2, Optimization Techniques.
- **Online Certifications**: TensorFlow Developer Certificate by Google, Deep Learning Specialization by Coursera, Machine Learning by Coursera.