Talika Gupta

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EDUCATION

Indian Institute of Information Technology Guwahati — Guwahati, India
Bachelor of Technology - Computer Science; GPA: 9.87/10, 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 at EACL 2024.

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 scalable approach for Coreference Resolution on long documents, by exploiting the divide and conquer strategy.
- Achieved state-of-the-art (SoTA) CoNLL F1 score on German texts and near SoTA on English text (LitBank), while being considerably more memory efficient.

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.

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

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.

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 students 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.
- Selected to participate in Google Research Week 2024 at Google Research, Bangalore.
- All India Rank 2/1000 in the Lady Ada Programming Contest 2022 hosted by ACM-W India.
- Received the Bank of Baroda Achievers Award 2022 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 at IIIT Guwahati.
- Mentored four freshmen, assisting them in navigating their first year.
- Taught mathematics to underprivileged girls at the Ankur Children's Home in the summer of 2018.