

Kartik Shinde

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- ★ A Junior Year Undergraduate from the Indian Institute of Technology, Patna (IIT Patna).
- ★ Has research experience of more than one year in the domain of NLP, actively collaborates with student researchers and professors on various AI, NLP problems with a passion for submitting research studies at top venues.
- ★ A resourceful problem-solver, likes to attempt intriguing tasks, and brainstorm on creative and unconventional approaches.
- ★ Motivated towards learning and improving research and engineering skills, likes to read the latest research works in the concerned domain.
- ★ Strong in coding and fond of building and studying, structuring and optimizing deep neural networks. Has good data processing and analysing skills.
- ★ An effective team player, loves to contribute with ideas.
- ★ Has good mathematical and statistical aptitude, with critical thinking, attention to detail, and organizational, interpersonal and collaborative skills.

EDUCATION

BACHELOR OF TECHNOLOGY

Patna, India | Aug 2019 - Present

INDIAN INSTITUTE OF TECHNOLOGY, PATNA, CEE - 7.71 CPI
Semester-VI

HIGHER SECONDARY

Mumbai, India | 2019

PACE JR. SCIENCE COLLEGE - 80.46%

SECONDARY

Mumbai, India | 2017

ARYA GURUKUL - 94.00%, 10 CGPA (CBSE)

PUBLICATIONS

- (**): Kartik Shinde*, Hardik Arora*, and Tirthankar Ghosal.
Title - Sentiment-leveraged Aspect Extraction for Peer Reviews.
(*equal contribution, **under review, double-blind policy at the venue).
- **WeCNLP 2021** : Muskaan Singh, Kartik Shinde, Tirthankar Ghosal and Ondřej Bojar.
Poster Title - AutoMin: A Resource for Automatic Minuting.
- (**): Kartik Shinde, Tirthankar Ghosal, Muskaan Singh and Ondřej Bojar.
Title - Automatic Minuting with Large-Language Models.
(*under review, double-blind policy at the venue)
- **INTERSPEECH 2021** : Kartik Shinde, Nidhir Bhavsar and Akash Bhatnagar.
Title - Team ABC System Run for AutoMin Shared Task @ INTERSPEECH 2021.
- **ICONIP 2021** : Rajeev Verma*, Kartik Shinde*, Hardik Arora, and Tirthankar Ghosal.
Title - Attend To Your Review: A Deep Neural Network to Extract Aspects from Peer Review
(*equal contribution).

EXPERIENCE

UFAL, CHARLES UNIVERSITY | UNDERGRADUATE STUDENT RESEARCHER

May 2021 - | Prague, Czech Republic

- Guide - Dr. Ondřej Bojar (ÚFAL, Charles University, Czech Republic)
- Worked for developing an approach for end-to-end the **Automatic Minuting** of meeting transcripts.

- We explored the use of **LLMs**, by training/fine-tuning on various **dialogue summarization** datasets, and concatenate everything into a pipeline that retrieves the major points of discussion in a meeting and generates a coherent readable minute of the meeting.
- We developed a novel **extractive-abstractive** pipeline that exploits the knowledge from **pre-trained language models** and supervised preprocessing for generating meeting minutes.
- To the best of our knowledge, the study is the first attempt to retrieve most of the information from a meeting discussion in the form of bullet-point summaries. Our system takes into account the **coverage**, **adequacy**, and **readability** to generate the best **utilizable summary of a meeting transcript**, having any length.
- Our system had **best performance** among all others in the shared task: **AutoMin@Interspeech-2021**.
Human Evaluation Scores - [Adequacy: 4.46/5.00 - Grammaticality: 4.45/5.00 - Fluency: 4.18/5.00]:
Automated Evaluation Scores - [ROUGE-1: 45.17 - ROUGE-2: 13.3 - ROUGE-SU4: 20.33].

AI-ML-NLP LAB, IIT PATNA | UNDERGRADUATE STUDENT RESEARCHER

Mar 2021 - Jul 2021 | Patna, India

- Guide - Dr. Tirthankar Ghosal (Faculty at Institute of Formal and Applied Linguistics, Charles University, Czech Republic)
- Given that the **peer-review** system is fraught with issues like 'non-committal weak rejects', we worked on a system that can help with checking the quality of the review reports.
- We proposed a **deep neural architecture** to extract the aspects of the paper on which the reviewer commented in their review. Our automatic **aspect-extraction** model, based on **BERT, BiLSTM, and Neural Attention** mechanism, **achieves superior performance over the standard baselines**.

AI-ML-NLP LAB, IIT PATNA | UNDERGRADUATE STUDENT RESEARCHER

Aug 2021 - Nov 2021 | Patna, India

- Guide - Dr. Tirthankar Ghosal (Faculty at Institute of Formal and Applied Linguistics, Charles University, Czech Republic)
- Peer reviews can serve as a rich source of **knowledge discovery** from texts that are human-generated and also opinionated on the paper under scrutiny. Correctly understanding the reviewer's aspectual perspective on the paper is crucial for chairs/editors to take a stand and also for the authors to respond or revise accordingly.
- We proposed a **Multi Aspect-cum-Sentiment Extraction** model from **Peer Reviews (MASEPR)**, which does a **joint learning of representations** for extracting the aspects present in a review sentence along with their associated sentiments. We conduct our experiments on a recent ASAP dataset of peer-reviews and show that an **attention-based, sentiment-leveraged multi-tasking approach** incorporates a better understanding of the aspects and sentiment features into the model.
- Our model advances the **current state-of-the-art** by accurately predicting the presence of multiple aspects with varying polarities, even from single sentence instances. The work is being **open-sourced** for the community via our GitHub and **web interface** soon.

AI-ML-NLP LAB, IIT PATNA | UNDERGRADUATE STUDENT RESEARCHER

Oct 2020 - Dec 2020 | Patna, India

- Worked on the task of 'Multimodal Hate Speech Detection' under Dr. Sriparna Saha.
- Applied LSTM on Tweet Text and Image Text data collected from the MMHS150K Dataset, using **GloVe Embeddings** and PyTorch.
- Given the inefficiency of Multi-modal Models to outperform the baselines, the goal was to achieve improved results with **Multi-modal data**, with **Google Inception v3** and Textual Kernels, to detect hatred on social platforms more accurately and provide the user base with a more sophisticated experience.

- Picked up Web Development Basics and learned to implement them efficiently to build a **Profile Portfolio webpage**.
- Had hands-on experience with **HTTP** and **REST API** and deployed a prototype web application using Heroku and **Netlify Cloud** Deployment.
- Worked on and learned about '**Apache Kafka**' and studied **debugging** a few real-life web app issues using a prototype of a popular **food-delivery app**.

PROJECTS

Automatic Headline and Sentiment Generator

- This project was a part of INTER-IIT TECH MEET 2021.
- On the first subtask to classify a news article into two categories namely - 'Mobile Tech' and 'Non-Tech', we used a BERT-based classifier, achieving an **F1-score** of **98.9**.
- The second subtask involved Named-Entity Recognition and Sentiment of different brand names from the article. For this, we used a **BiLSTM BERT-based model with attention**, and ABSA (**Aspect-based Sentiment Analysis**) to improve our results.
- The third subtask involved generation of suitable article headlines. For this, we again used a **BERT-based attention model**. We achieved a **BLEU-score** of **0.45** on the task.

RC Car and Line Follower Mobile using Arduino-UNO

- Built an **RC car** that had the fastest time lap among other competitors, and a **Line Follower** Mobile that traverses through a given line using **Arduino-UNO**.

Working Li-Fi Prototype

- A small receiver-transmitter device that transmitted data (audio-visual) from a Local Area Transmitter to Native Devices using **Light-Fidelity**.

SKILLS

Technical Skills

- Skills: NLP, ML, Deep Learning, Artificial Intelligence, Computer Vision, Cloud Deployment, Arduino.
- Languages: C, C++, Python(preferred), HTML, CSS, Javascript.
- Libraries: Tensorflow, Keras, PyTorch, OpenCV, NLTK.

Personal Skills

- An Excellent Rubik's Cube Solver. Solves varieties of puzzles like the Megaminx, 3*3/4*4/5*5/Mirror Cubes.
- A good, astute debater having represented the institute in Parliamentary Debates.
- Versatility in playing roles and acting. Represents the institute contingent in plays and Inter-IITs.
- Sports enthusiast. Represented school at district level Chess and Cricket.

CO-CURRICULARS and POR

Sub Coordinator, Marketing and Sponsorship @ Anwesha, IIT Patna

- Part of the **Organizing Committee** of the Annual Techno-Cultural Fest of the Institute - Anwesha.

IIT Patna - Cricket Team

- Member of the Cricket Team @ IIT Patna.

IIT Patna - Yavanika, The Dramatics Club

- Member of the Yavanika and Cultural Contingent @ IIT Patna.

Volunteer Works

Anwasha @ IIT Patna, Annual **Cultural Fest**

- Media and Public Relations (MPR)
- Events and Management
- R&D

Celesta @ IIT Patna, Annual **Tech-Fest** Fest

- Web-Development Committee
- Media and Public Relations (MPR)
- Events and Management

Infinito @ IIT Patna, Annual **Sports** Fest

- Marketing and Sponsorship