

# KESHAV SINGH

📍 Tokyo, Japan

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## EDUCATION

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### Ph.D. in Intelligent Information Sciences (Inui-Lab) Tohoku University

Sendai, Japan

• Thesis: "Bridging the Implicit Reasoning Gap in Arguments: An Overnight Approach"

2020-2023

### M.Sc. in Intelligent Information Sciences (Inui-Lab) Tohoku University

Sendai, Japan

• Thesis: "Bridging the Reasoning Gap in Arguments: Utilizing Externally Collected Warrants for Improving Evidence Detection"

2018-2020

• Final Grade: 3.8/4.0

### B.Eng. in Mechanical Engineering, University Institute of Technology

Bhopal, India

• Final Grade: 7.25/10.0

2013-2017

## WORK EXPERIENCE

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### Fast Accounting

Tokyo, Japan

NLP Research Scientist (L5)

July 2024 - Present

- Leading the full-scale development of domain-specific LLM model (pre-training + fine-tuning) for understanding of Japanese and English financial & accounting data.

### CTW

Tokyo, Japan

NLP Research Scientist (L2)

April 2023 - June 2024

- Implemented Retrieval-augmented generation (RAG) pipeline in an LLM-based QA system, automating **55%** of customer problem resolutions.
- Idealized and implemented personality induced chatbot, boosting customer engagement on game platform by **25%**.
- Lead the development of end-to-end graphic design framework for Ad-Banner generation.
- Achieved cost savings of **\$60,000** per year.

### ENCORED Japan

Sendai, Japan

Deep Learning Intern

July 2021 - July 2022

- Designed and implemented time-series forecasting model with **90%** accuracy for real-time prediction of electricity prices in Japan.

### SOLANETS

Sendai, Japan

Machine Learning Intern

April 2020 - September 2020

- Implemented ML algorithms for analysis of Twitter user data to predict future viral tweet.

## SKILLS

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### Languages

English, Hindi, Japanese (JLPT N2 Ongoing)

### Computer Languages

Python, Bash, JavaScript, HTML5

### ML/DL Toolkit

Pytorch, Huggingface, AWS, Guidance, Langchain

### Frameworks & APIs

JSON, Django, FastAPI, OpenAI, VisionAI

### Databases

PostgreSQL (PGVector)

### Tools

VSCode, Emacs, Grafana, Git

## HONORS

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<b>MEXT Scholarship</b>	Research scholarship by the Government of Japan for pursuing M.Sc. & Ph.D.
<b>MP-PET Scholarship</b>	Merit-based student scholarship from the Government of MP (India) for pursuing B.Eng.
<b>Stock Trading</b>	3rd rank, Virtual Stock Trading Championship by Reliance, India

## SCHOLASTIC ACHIEVEMENTS

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**HULT Prize, Tohoku University** **Sendai, Japan**  
*Logistics and Team Coordinator* *January 2021*

- Successfully organized HULT Prize, one of the most prestigious start-up awards co-partnered by the UN.

**International Development Youth Forum** **Tokyo, Japan**  
*Representative, India* *April 2016*

- Envisaged and proposed solutions to problems faced by Batik industry in Indonesia.

**Agribida, AIESEC** **Davao, Philippines**  
*Business Development Intern* *August 2015*

- Executed water conservation project in underdeveloped areas with the Davao Water Department.

## RESEARCH PUBLICATIONS (PEER REVIEWED)

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**IRAC: A Domain-specific Annotated Corpus of Implicit Reasoning in Arguments** **Marseille, France**  
• Keshav Singh, Naoya Inoue, Farjana Sultana Mim, Shoichi Naito and Kentaro Inui *LREC*  
*In Proceedings of the 13th Conference on Language Resources and Evaluation (LREC 2022),* *June 2022*  
*pages 4674-4683 Marseille, June 2022*

**Exploring Methodologies for Collecting High-Quality Implicit Reasoning in Arguments** **Punta Cana, DR**  
• Keshav Singh, Farjana Sultana Mim, Naoya Inoue, Shoichi Naitoh and Kentaro Inui. *ArgMining*  
*In Proceedings of the 8th Workshop on Argument Mining, pages 57-66 Punta Cana,* *November 2021*  
*Dominican Republic, November 2021.*

**Annotating Implicit Reasoning in Arguments with Causal Links** **Online**  
• Keshav Singh, Naoya Inoue, Farjana Sultana Mim, Shoichi Naitoh and Kentaro Inui. *October 2021*  
*Argumentation Knowledge Graphs, October 2021 (Non-archival)*

**Improving Evidence detection by leveraging Warrants** **Hong Kong**  
• Keshav Singh, Paul Reisert, Naoya Inoue, Pride Kavumba and Kentaro Inui. *FEVER*  
*In Proceedings of the Second Workshop on Fact Extraction and VERification (FEVER)* *November 2019*  
*pages 57-62 Hong Kong, November 3, 2019.*