





Varun Gumma









SCAI Center Fellow | Microsoft Research

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Education

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| June 2023 Aug 2021 | Indian Institute of Technology (IIT), Madras M.Tech. in Computer Science & Engineering CGPA: 9.62/10 Dept Rank: 3 Teaching Exp: Pattern Recognition & Machine Learning, Linear Algebra & Random Processes, Fundamentals of Deep Learning | Chennai, India |
| Jun 2021 Aug 2017 | Birla Institute of Technology and Science (BITS), Pilani B.E. in Computer Science & Engineering with Minor in Physics CGPA: 9.14/10 Teaching Exp: Introductory Physics, Computer Programming, Discrete mathematics, Data Structures & Algorithms, Foundations of Data Science, Machine Learning | Hyderabad, India |

Experience

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| Present July 2023 | Microsoft Research  SCAI Center Fellow Advisor: <i>Dr. Kalika Bali</i> Working on multi-dimensional evaluation of Large Language Models and debiasing Machine Translation systems. | Bangalore, India |
| July 2023 May 2023 | Microsoft Research  Research Intern Advisor: <i>Dr. Sunayana Sitaram</i> Worked on multi-dimensional modular debiasing of Pre-trained Language Models such as BERT and RoBERTa. | Bangalore, India |
| May 2023 Aug 2022 | Indian Institute of Technology, Madras AI4Bharat  Graduate Research Advisors: <i>Dr. Raj Dabre, Prof. Mitesh Khapra</i> Working on understanding the effects of Knowledge Distillation on Multilingual Neural Machine Translation models, specifically for Indian languages. | Chennai, India |
| Jul 2022 Jun 2022 | National University of Singapore  Visiting Research Scholar Advisor: <i>Dr. Aditya Karanam</i> Worked on developing Machine Learning and Deep Learning models to extract <i>suggestions</i> and identify <i>suggested-features</i> from noisy user comments using Name-Entity-Recognition. | Kent Ridge, Singapore |
| May 2021 Jan 2021 | Birla Institute of Technology and Sciences, Pilani  Undergraduate Research Advisor: <i>Prof. N.L. Bhanu Murthy</i> Worked on developing a Deep Learning model to automatically generate comments for Java code snippets. | Hyderabad, India |
| May 2021 Jan 2021 | Birla Institute of Technology and Sciences, Pilani  Undergraduate Research Advisor: <i>Prof. Barsha Mitra</i> Worked on analyzing the performance of various Machine Learning models on ABAC datasets for <i>Policy Generalization & Augmentation</i> . | Hyderabad, India |
| May 2020 Jan 2020 | Birla Institute of Technology and Sciences, Pilani  Undergraduate Research Advisor: <i>Prof. N.L. Bhanu Murthy</i> Worked on fine-tuning BERT for Name-Entity-Recognition in Telugu. | Hyderabad, India |
| July 2019 May 2019 | Defense Research & Development Organization-Research Centre Imarat  Student Intern Worked on building an Object Detection Model to identify cars in a given image. | Hyderabad, India |

Publications

C=Conference, W=Workshop, J=Journal, A=Arxiv (* = equal contribution)

- [A.3] **MEGAVERSE: Benchmarking Large Language Models Across Languages, Modalities, Models and Tasks**
Sanchit Ahuja, Divyanshu Aggarwal, [Varun Gumma](#), Ishaan Watts, Ashutosh Sathe, Millicent Ochieng, Rishav Hada, Prachi Jain, Maxamed Axmed, Kalika Bali, Sunayana Sitaram
e-Print Archive [Arxiv]
- [A.2] **Are Large Language Model-based Evaluators the Solution to Scaling Up Multilingual Evaluation?**
Rishav Hada, [Varun Gumma](#), Adrian de Wynter, Harshita Diddee, Moxamed Axmed, Monojit Choudhury, Kalika Bali, Sunayana Sitaram
e-Print Archive [Arxiv]
- [J.1] **IndicTrans2: Towards High-Quality and Accessible Machine Translation Models for all 22 Scheduled Indian Languages**
Jay Gala*, Pranjal A. Chitale*, Raghavan AK, [Varun Gumma](#), Sumanth Doddapaneni, Aswanth Kumar, Janki Nawale, Anupama Sujatha, Ratish Puduppully, Vivek Raghavan, Pratyush Kumar, Mitesh M. Khapra, Raj Dabre, Anoop Kunchukuttan
Transactions of Machine Learning Research [TMLR'23]
- [C.2] **An Empirical Study of Leveraging Knowledge Distillation for Compressing Multilingual Neural Machine Translation Models**
[Varun Gumma](#), Raj Dabre, Pratyush Kumar
24th Annual Conference of The European Association of Machine Translation [EAMT'23]
- [C.1] **PAMMELA: Policy Administration Methodology using Machine Learning**
[Varun Gumma](#), Barsha Mitra, Soumyadeep Dey, Pratik Shashikantbhai Patel*, Sourabh Suman*, Saptarshi Das, Jaideep Vaidya
19th International Conference on Security and Cryptography [SECRYPT'22]

Relevant Coursework

- M.Tech.** Advanced Data Structures & Algorithms, Pattern Recognition & Machine Learning, Fundamentals of Deep Learning, Natural Language Processing, Reinforcement Learning, Linear Programming & Combinatorial Optimization
- B.E.** Software Engineering, Foundations of Data Science, Machine Learning, Deep Learning, Quantum Information and Computing

Skills

- Programming Languages:** Python, Java, C++, C, SQL, \LaTeX
- Libraries & Frameworks:** HuggingFace Transformers, Fairseq, PyTorch-Lightning, PyTorch, TensorFlow, Scikit-Learn, Weights & Biases, Unix, GIT

Academic Service

Peer Reviewer EMNLP'23, EACL'24

Awards and Achievements

- IIT Madras STAR TA, 2021-2023** For outstanding contributions as a Graduate Teaching Assistant
- GATE CS&IT, 2021** Secured an All India Rank of 159 with a score of 816/1000
- BITS Merit Scholarship, 2018** For meritorious academic performance in the year 2017-2018

References

- > Dr. Kalika Bali *Principal Researcher, Microsoft Research, India* [🔗]
- > Dr. Sunayana Sitaram *Principal Researcher, Microsoft Research, India* [🔗]
- > Prof. Mitesh Khapra *Associate Professor, IIT Madras, Chennai* [🔗]
- > Dr. Raj Dabre *Researcher, NICT, Japan* [🔗]