





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: Dr. Kalika Bali Working on multi-dimensional evaluation of Large Language Models and building Machine Translation systems for low-resource languages. | Bangalore, India |
| July 2023 May 2023 | Microsoft Research  Research Intern Advisor: Dr. Sunayana Sitaram Worked on multi-dimensional modular debiasing of Pre-trained Language Models (BERT/Roberta). | Bangalore, India |
| May 2023 Aug 2022 | Indian Institute of Technology, Madras AI4Bharat  Graduate Research Advisors: Dr. Raj Dabre , Prof. Mitesh Khapra 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: Dr. Aditya Karanam 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: Prof. N.L. Bhanu Murthy 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: Prof. Barsha Mitra 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: Prof. N.L. Bhanu Murthy 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 |

- [A.1] **Beyond Metrics: Evaluating LLMs' Effectiveness in Culturally Nuanced, Low-Resource Real-World Scenarios**
Millicent Ochieng, [Varun Gumma](#), Sunayana Sitaram, Jindong Wang, Keshet Ronen, Kalika Bali, Jacki O'Neill
e-Print archive [arXiv]
- [C.7] **[Best Paper] Akal Badi ya Bias: An Exploratory Study of Gender Bias in Hindi Language Technology**
Rishav Hada, Safiya Husain, [Varun Gumma](#), Harshita Diddee, Aditya Yadavalli, Agrima Seth, Nidhi Kulkarni, Ujwal Gadiraju, Aditya Vashistha, Vivek Seshadri, Kalika Bali
7th Annual ACM Conference on Fairness, Accountability, and Transparency [FAccT '24]
- [C.6] **METAL: Towards Multilingual Meta-Evaluation**
Rishav Hada*, [Varun Gumma](#)*, Mohamed Ahmed, Kalika Bali, Sunayana Sitaram
Findings of the Association for Computational Linguistics: NAACL 2024 [NAACL '24]
- [C.5] **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, Mohamed Ahmed, Kalika Bali, Sunayana Sitaram
2024 Annual Conference of the North American Chapter of the Association for Computational Linguistics - Human Language Technologies (NAACL-HLT) [NAACL '24]
- [W.1] **MunTTS: A Text-to-Speech System for Mundari**
[Varun Gumma](#), Rishav Hada, Aditya Yadavalli, Pamir Gogoi, Ishani Mondal, Vivek Seshadri, Kalika Bali
7th Workshop on Computational Methods for Endangered Languages [ComputEL'24]
- [C.4] **MAFIA: Multi-Adapter Fused Inclusive Language Models**
Prachi Jain*, Ashutosh Sathe*, [Varun Gumma](#), Kabir Ahuja, Sunayana Sitaram
18th Conference of the European Chapter of the Association for Computational Linguistics [EACL'24]
- [C.3] **Are Large Language Model-based Evaluators the Solution to Scaling Up Multilingual Evaluation?**
Rishav Hada, [Varun Gumma](#), Adrian de Wynter, Harshita Diddee, Mohamed Ahmed, Monojit Choudhury, Kalika Bali, Sunayana Sitaram
Findings of the Association for Computational Linguistics: EACL 2024 [EACL'24]
- [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 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 - SECRIPT [SECRIPT'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, NAACL’24, ACL’24, ACL Rolling Review

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 BaliPrincipal Researcher, Microsoft Research, India [🌐]
> Dr. Sunayana SitaramPrincipal Researcher, Microsoft Research, India [🌐]
> Dr. Raj DabreAdjunct Faculty, IIT Madras/Bombay; Researcher, NICT, Japan [🌐]
> Prof. Mitesh KhapraAssociate Professor, IIT Madras, Chennai [🌐]