Ratish Puduppully

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Summary

Assistant Professor at the IT University of Copenhagen in the NLP group, combining a passion for teaching with a commitment to advancing research in machine learning and computational linguistics. Earned a PhD in Informatics from the University of Edinburgh, with a track record of impactful publications in leading journals and conferences. Recognized for academic excellence through prestigious awards and scholarships, and experienced in research roles at renowned institutions. A dedicated mentor to aspiring researchers, fostering their growth and contributing to knowledge dissemination in the field.

Education

Sep 2017 - Nov 2021	PhD in Informatics, University of Edinburgh. Awarded Best Thesis in Informatics in Scotland by SICSA. Advisor: Prof. Mirella Lapata
Dec 2014 - Feb 2017	MS in CSE by Research, IIIT Hyderabad Advisor: Prof. Manish Shrivastava Grade: 9.33 CGPA
Jul 2001 – Jun 2005	B.E in Electronics and Telecommunications. Mumbai University. Grade: equiv. to 9 CGPA.

Research Publications

Under Review

1. Anonymized. (2024). Graph mamba. Submitted to ICLR 2025.

Journal Articles

1. AI4Bharat, Gala, J., Chitale, P. A., AK, R., Doddapaneni, S., Gumma, V., … Kunchukuttan, A. (2023). Indictrans2: Towards high-quality and accessible machine translation models for all 22 scheduled indian languages. *Transactions of Machine Learning Research (TMLR)*. arXiv: 2305.16307 [cs.CL]
2. **Puduppully**, **R.**, Fu, Y., & Lapata, M. (2022). Data-to-text generation with variational sequential planning. *Transactions of the Association for Computational Linguistics (TACL), abs/2202.13756*. Retrieved from https://arxiv.org/abs/2202.13756
3. **Puduppully**, **R.**, & Lapata, M. (2021). Data-to-text generation with macro planning. *Transactions of the Association for Computational Linguistics (TACL)*. doi:https://doi.org/10.1162/tacl_a_00381

Conference Proceedings

1. Husain, J. A., Dabre, R., Kumar, A., **Puduppully**, **R.**, & Kunchukuttan, A. (2024, July). Romansetu: Efficiently unlocking multilingual capabilities of large language models models via romanization. In *Proceedings of the 62nd annual meeting of the association for computational linguistics*.
2. Singh, A., Sai, A. B., Dabre, R., **Puduppully**, **R.**, Kunchukuttan, A., & Khapra, M. M. (2024, July). How good is zero-shot mt evaluation for low resource indian languages? In *Proceedings of the 62nd annual meeting of the association for computational linguistics (short papers)*.

3. Hwang, S., Lahoti, A., **Puduppully**, **R.**, Dao, T., & Gu, A. (2024). Hydra: Bidirectional state space models through generalized matrix mixers. In *Proceedings of the neurips 2024*.

4. Kumar, A., Kunchukuttan, A., **Puduppully**, **R.**, & Dabre, R. (2023, December). In-context example selection for machine translation using multiple features. In *Findings of the 2023 conference on empirical methods in natural language processing*, Singapore: Association for Computational Linguistics. eprint: 2305.14105

5. **Puduppully**, **R.**, Dabre, R., Aw, A. T., & Chen, N. F. (2023, December). Decomposed prompting for machine translation between related languages using large language models. In *Proceedings of the 2023 conference on empirical methods in natural language processing (to appear)*, Singapore: Association for Computational Linguistics. eprint: 2305.13085

6. **Puduppully**, **R.**, Jain, P., Chen, N., & Steedman, M. (2023, July). Multi-document summarization with centroid-based pretraining. In A. Rogers, J. Boyd-Graber, & N. Okazaki (Eds.), *Proceedings of the 61st annual meeting of the association for computational linguistics (volume 2: Short papers)* (pp. 128–138). doi:10.18653/v1/2023.acl-short.13

7. Mundra, N., Doddapaneni, S., Dabre, R., Kunchukuttan, A., **Puduppully**, **R.**, & Khapra, M. M. (2023, January). A comprehensive analysis of adapter efficiency. In *Proceedings of the 2024 cods-comad conference*, Bengaluru, India. eprint: 2305.07491

8. Kumar, A., Shrotriya, H., Sahu, P., Mishra, A., Dabre, R., **Puduppully**, **R.**, … Kumar, P. (2022, December). IndicNLG benchmark: Multilingual datasets for diverse NLG tasks in Indic languages. In *Proceedings of the 2022 conference on empirical methods in natural language processing* (pp. 5363–5394). Abu Dhabi, United Arab Emirates: Association for Computational Linguistics. Retrieved from https://aclanthology.org/2022.emnlp-main.360

9. Dabre, R., Shrotriya, H., Kunchukuttan, A., **Puduppully**, **R.**, Khapra, M., & Kumar, P. (2022, May). IndicBART: A pre-trained model for indic natural language generation. In *Findings of the association for computational linguistics: Acl 2022* (pp. 1849–1863). doi:10.18653/v1/2022.findings-acl.145

10. **Puduppully**, **R.**, Mallinson, J., & Lapata, M. (2019, November). University of Edinburgh's submission to the document-level generation and translation shared task. In *Proceedings of the 3rd workshop on neural generation and translation* (pp. 268–272). doi:10.18653/v1/D19-5630

11. **Puduppully**, **R.**, Dong, L., & Lapata, M. (2019a, July). Data-to-text generation with entity modeling. In *Proceedings of the 57th annual meeting of the association for computational linguistics* (pp. 2023–2035). doi:10.18653/v1/P19-1195

12. **Puduppully**, **R.**, Dong, L., & Lapata, M. (2019b). Data-to-text generation with content selection and planning. In *Proceedings of the 33rd AAAI Conference on Artificial Intelligence*. doi:https://doi.org/10.1609/aaai.v33i01.33016908

13. **Puduppully**, **R.**, Zhang, Y., & Shrivastava, M. (2017, April). Transition-based deep input linearization. In *Proceedings of the 15th conference of the European chapter of the association for computational linguistics: Volume 1, long papers* (pp. 643–654). Valencia, Spain: Association for Computational Linguistics. Retrieved from https://www.aclweb.org/anthology/E17-1061

14. **Puduppully**, **R.**, Zhang, Y., & Shrivastava, M. (2016, June). Transition-based syntactic linearization with lookahead features. In *Proceedings of the 2016 conference of the north American chapter of the association for computational linguistics: Human language technologies* (pp. 488–493). doi:10.18653/v1/N16-1058

Workshop/ Demonstrations Proceedings

1. Toh, V., **Puduppully**, **R.**, & Chen, N. F. (2023). *Veritymath: Advancing mathematical reasoning by self-verification through unit consistency*. AI4MATH Workshop at ICML 2024. arXiv: 2311.07172 [cs.CL]

2 Gehrmann, S., Bhattacharjee, A., Mahendiran, A., Wang, A., Papangelis, A., Madaan, A., … Hou, Y. (2022, December). *GEMv2: Multilingual NLG benchmarking in a single line of code*. Abu Dhabi, UAE: Association for Computational Linguistics. Retrieved from https://aclanthology.org/2022.emnlp-demos.27

3 Kunchukuttan, A., **Puduppully**, **R.**, & Bhattacharyya, P. (2015, June). *Brahmi-net: A transliteration and script conversion system for languages of the Indian subcontinent*. doi:10.3115/v1/N15-3017

4 Bhingardive, S., **Puduppully**, **R.**, Singh, D., & Bhattacharyya, P. (2014, December). *Merging verb senses of Hindi WordNet using word embeddings*. Goa, India: NLP Association of India. Retrieved from https://www.aclweb.org/anthology/W14-5148

Preprint

1 Gala, J., Jayakumar, T., Husain, J. A., M, A. K., Khan, M. S. U. R., Kanojia, D., … Kunchukuttan, A. (2024). *Airavata: Introducing hindi instruction-tuned llm*. arXiv: 2401.15006 [cs.CL]

Patents

2016 Method and system for sharing content. US Patent 9,256,695. Willis, B. Natraj,S., Shinde, S., Agarwal,T., **Puduppully, R.**, Santhi Pulagala S. and Chang S.

Research Positions

Sep 2024 - Present Assistant Professor at IT University of Copenhagen in the NLP group.

Sep 2022 - Aug 2024 Senior Scientist I, A*STAR Research
I work on research related to Large Language Models (LLMs) for machine translation, math language processing, and other applications.

Dec 2021 - July 2022 Research Associate, University of Edinburgh.
I worked with Prof. Mark Steedman in the area of multi-document summarization.

Jun - Oct 2019 Intern, Google Research London.
I interned with Ryan McDonald's text summarization team at Google Research London. I worked on researching recurrent neural network grammar based approaches to jointly generate summary and its parse tree.

Mar - Aug 2017 Research Assistant, Singapore University of Technology and Design.
I was part of Prof. Yue Zhang's NLP lab. I worked in the area of financial market prediction using text data.

May - Dec 2014 Research Engineer, Center for Indian Language Technology (CFILT) lab at IIT Bombay.
I worked in areas of Machine Translation and Word Sense Disambiguation under the guidance of Prof. Pushpak Bhattacharyya.

Teaching Experience

2021 Tutor, Demonstrator and Marker for Natural Language Understanding, Generation, and Machine Translation

2018 Tutor for Accelerated Natural Language Processing

Mentoring Experience

- 2023 Jaavid Akhtar, Research Intern at IIT Madras on "RomanSetu: Efficiently unlocking multilingual capabilities of Large Language Models models via Romanization"
- Nandini Mundhra, M.S. by Research student from IIT Madras on "A Comprehensive Analysis of Adapter Efficiency"
- Aswanth Kumar, MTech student from IIT Madras on "In-context Example Selection for Machine Translation Using Multiple Features"
- Pranjal Chitale, M.S. by Research student from IIT Madras on machine translation between related languages
- Yuting Tang, undergraduate student from NTU Singapore on LLM evaluation
- Vernon Toh, undergraduate student from SUTD Singapore on Math Language Models
- 2022 Himani Shrotriya, Aman Kumar and Prachi Sahu, MTech students from IIT Madras on the project "IndicNLG Benchmark: Multilingual Datasets for Diverse NLG Tasks in Indic Languages"

Employment History

- 2005 – 2008 Software Engineer, Infosys Technologies Ltd.
- 2008 – 2014 Technical Architect, R&D Division, Saba Software, Mumbai.

Skills

- Languages: Strong reading, writing and speaking competencies for English, Hindi, Marathi and Malayalam.
- Programming Languages: Regular Use: Python. Less recent use: Java, C++, Javascript
- Machine Learning Tools: Regular use: Pytorch. Less recent use: Tensorflow, Dynet.

Miscellaneous Experience

Awards and Achievements

- 2022 Best PhD Dissertation in Scotland award from SICSA Scotland
- 2017 Edinburgh Global Research Scholarship and Principal's Career Development Scholarship for pursuing PhD studies at University of Edinburgh.
- Travel Grant from ACM India for presenting paper at EACL conference in Valencia, Spain.
- 2016 Travel Grant from Microsoft for presenting paper at NAACL conference in San Diego, US
- 2002-04 JRD Tata Scholarship for Academic Excellence for undergraduate studies.

Service

- 2018-Present **Reviewer**. ACL, EMNLP, NAACL, EACL
- 2020 **Reviewer**. EMNLP: Outstanding reviewer

Miscellaneous Experience (continued)

Volunteering

2018-2020 — Digital Ambassador at University of Edinburgh.
Volunteered as a Digital Ambassador to help improve digital literacy amongst people, mainly elderly persons in community. The project won the 2019 University of Edinburgh Social Responsibility and Sustainability Community Partnership Award.