Amrith Krishna

NLP Researcher | IT University of Copenhagen

Address

4E02
Dept. of Computer Science,
IT University of Copenhagen,
Denmark.

Tel

+4591622475

Mail

amrk@
itu.dk
krishnamrith12@
gmail.com

Web

https://krishnamrith12
.github.io ↗

Social Presence

Linkedin ↗
Twitter ↗
Stack Overflow ↗
Github ↗

Education

Ph.D
2015 - 2019
IIT Kharagpur
M.Tech
2013 - 2015
IIT Kharagpur
CGPA 9.27
B.Tech
2008 - 2012
FISAT
Aggregate 76.10 %

I am a postdoctoral researcher at the IT University of Copenhagen, Denmark since 15th August 2019. I am working with Dr Natalie Schluter with focus on my research at the intersection of formal languages, algorithms, and machine learning. Prior to this, I joined my PhD under the supervision of Prof Pawan Goyal at the Dept. of Computer Science and Engineering, IIT Kharagpur, India on July 2015. I defended my thesis titled 'Addressing Language Specific Characteristics for Data-Driven Modelling of Lexical, Syntactic and Prosodic Tasks in Sanskrit' on October 2019. Broadly, I am interested in anything that comes under computational linguistics and Natural Language Processing. Specifically my research interests lies in morphology, syntax , structured prediction, program synthesis, and data augmentation.

Publications

Krishna, Amrith ; Santra, Bishal; Gupta, Ashim; Satuluri, Pavankumar; Goyal, Pawan. A Structured Prediction Framework Using Energy Based Models for Sanskrit. Computational Linguistics, MIT Press (Communicated).

Gupta, Ashim; **Krishna, Amrith** ; Goyal, Pawan; Hellwig, Oliver. Evaluating Neural Morphological Taggers for Sanskrit. Proceedings of the 17th SIGMORPHON Workshop on Computational Research in Phonetics, Phonology, and Morphology (SIGMORPHON 2020). 58th Annual Meeting of the Association for Computational Linguistics (ACL).

Krishna, Amrith; Vidhyut, Shiv; Chawla, Dilpreet; Sambhavi, Sruti; Goyal Pawan. SHR++: An Interface for Morpho-syntactic annotation of Sanskrit Corpora. In International Conference on Language Resources and Evaluation 2020, Marseille (accepted). Online tool

Sandhan, Jivnesh; **Krishna, Amrith;** Goyal, Pawan; Behera, Laxmidhar. Revisiting the Role of Feature Engineering for Compound Type Identification in Sanskrit. October 2019. Proceedings of the Sixth International Sanskrit Computational Linguistics Symposium. IIT Kharagpur, India. paper

Krishna, Amrith ; Sharma, Vishnu Dutt ; Santra, Bishal ; Chakraborty, Aishik; Satuluri, Pavankumar ; Goyal, Pawan. Poetry to Prose Conversion in Sanskrit as a Linearisation Task: A case for Low- Resource Languages. In Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics (Volume 2: Short Papers, ACL 2019). Florence, Italy. paper

Krishna, Amrith ; Santra, Bishal ; Bandaru, Sasi Prasanth ; Sahu, Gaurav ; Sharma, Vishnu Dutt ; Satuluri, Pavankumar ; Goyal, Pawan. Free as in Free Word Order: An Energy Based Model for Word Segmentation and Morphological Tagging in Sanskrit. Proceedings of the 2018 Conference on Empirical Methods in Natural Language Processing, EMNLP 2018. Brussels, Belgium. Code | paper

Krishna, Amrith ; Majumder, Bodhisattwa P. ; Bhat, Rajesh ; Goyal, Pawan. Upcycle Your OCR: Reusing OCRs for Post-OCR Text Correction in Romanised Sanskrit. Proceedings of the 22nd Conference on Computational Natural Language Learning, CoNLL 2018.Brussels, Belgium. Code | paper

Reddy, Vikas; **Krishna, Amrith**; Sharma, Vishnu; Gupta, Prateek; M R Vineeth; Goyal Pawan. Building a Word Segmenter for Sanskrit Overnight. In International Conference on Language Resources and Evaluation 2018, Miyazaki, Japan. Code | paper

Krishna, Amrith; Majumdar, Bodhisattwa; Goyal Pawan. An 'Ekalavya' Approach to Learning Context Free Grammar Rules for Sanskrit Using Adaptor Grammar. In 17th World Sanskrit Conference – July 9-13, 2018 Vancouver, BC.

Krishna, Amrith; Satuluri Pavankumar; Goyal, Pawan (2017). "A Dataset for Sanskrit Word Segmentation" in Joint SIGHUM Workshop on Computational Linguistics for Cultural Her-

itage, Social Sciences, Humanities and Literature, 55th Annual Meeting of the Association for Computational Linguistics (ACL), Vancouver,Canada 2017. Dataset.

Krishna, Amrith; Satuluri, Pavankumar; Ponnada, Harshavardhan; Ahmed, Muneeb; Arora, Gulab; Hiware, Kaustubh; Goyal, Pawan (2017); A Graph Based Semi-Supervised Approach for Analysis of Derivational Nouns in Sanskrit. in Proceedings of TextGraphs 11 Workshop, ACL 2017 ,Canada 2017.link.

Krishna, Amrith; Satuluri, Pavankumar; Sharma, Shubham; Kumar, Apurv and Goyal, Pawan (2016). Compound Type Identification in Sanskrit: What Roles do the Corpus and Grammar Play? International Conference on Computational Linguistics WSSANLP, Workshop at COLING 2016, Osaka, Japan, Dec. 11-16. link.

Krishna, Amrith; Santra, Bishal; Satuluri Pavankumar; Bandaru, Sasi Prasanth; Faldu , Bhumi;Singh, Yajuvendra; Goyal, Pawan;"Word Segmentation in Sanskrit Using Path Constrained Random Walks" in COLING 2016. link.

Krishna, Amrith; Mallick, Madhumita; Mitra, Bivas; "SleepSensei - An automated sleep quality monitor and sleep duration estimator." in In IoT of Health Workshop, Mobisys 2016

Chakraborty, Tanmoy; **Krishna, Amrith**; Singh, Mayank; Ganguly, Niloy; Goyal, Pawan and Mukherjee, Animesh. "FeRoSA: A Faceted Recommendation System for Scientific Articles." in PAKDD 2016. link. | www.ferosa.org.

Krishna, Amrith and Goyal, Pawan. Towards automating the generation of derivative nouns in Sanskrit by simulating Panini. 16th World Sanskrit conference, 2015. link.

Krishna, Amrith; Bhowmick, Plaban; Sahu, Archana; Ghosh, Krishnendu; Roy, Subhayan. "Automatic Generation and Insertion of Assessment Items in Online Video Courses." In Proceedings of the 20th International Conference on Intelligent User Interfaces Companion, pp. 1-4. ACM, 2015. link.

Awards and Recognition

- Won numerous travel grants including Microsoft Travel Grant, EMNLP Travel Grant, ACM-IARCS Travel Grant, CNeRG Travel Grant and Institute International Best Conference travel grant for presenting our published works on the respective venues.
- Won grant of INR 5,00,000 for the project 'IndicView', from National Level Google IIT Pilot program. September 2014 - 2015.
- Stood among the top 0.080 % students in the Graduate Aptitude Test in Engineering, GATE 2013 CS with All India Rank 180 of 2,24,160 candidates
- Selected for Google NLP Summit, Zurich to be held on September 25 to 27.
- Received best demo award in IBM Day, IIT Kharapgur on 29th August 2015
- Finalist at Samsung Innovation awards at IIT Kharagpur, Oct. 2014,
- Recipient of 'Special Recognition award' for excellence in B.Tech from FISAT in 2012.

Academic Services and Volunteering

- **Reviewer - Computational Linguistics Journal, MIT Press**

- **Program Committee Member - COLING 2018, 2020; LREC 2020:** Committee Member for the 27th and 28th International Conference on Computational Linguistics (COLING) and LREC 2020

- **Organising Committee Member - CODS-COMAD 2018, 2019:** Web-Chair for the joint ACM-IKDD Conference on Data Sciences and International Conference on Management of Data (COMAD). Link.

- **Web Chair - 6th ISCLS 2019, Data Science in India, KDD 2017:** 6th International Sanskrit Computational Linguistics Symposium.Link.

Education

2015 - 2019	**PhD Student, CNeRG, Dept. of CSE, IIT Kharagpur**
	Broad Area of Research: Sanskrit Computational Linguistics.
	Thesis Advisor: Prof. Pawan Goyal. Department of CSE, IIT Kharagpur.
2013 - 2015	**M.Tech in CSE** CGPA 9.27
	IIT Kharagpur
2008 - 2012	**B. Tech in Computer Science & Engineering** Aggregate - 76.10 %
	FISAT - Federal Institute of Science & Technology,
	MG University, Kottayam, Kerala

Teaching and Leadership Experience

Jan'20-Jun'20 Supervisor, Master and Bachelor theses at ITU
Supervisor for one bachelor thesis project and one master thesis project. The projects are "Contextual Bandits - Solving text-based tasks" and "Learning Rational Transductions".

Aug'19-Dec'19 Supervisor, Research Project at ITU
Supervised 2 master students for the research project, Program Synthesis as Learning Rational Transductions, at IT University of Copenhagen

Aug'19-Nov'19 Lecturer, Introduction to Data Science and Programming
Course taught along with Natalie Schluter and Michael Szell at IT University of Copenhagen. Link for Live coding sessions and exercises available at - Github Link.

July'17-Nov'17 Teaching Assistant, Natural Language Processing
Lecture Session on Lexical Semantics, Information Extraction & Entity Linking. Kaggle Link.

Jan'17-May'17 Teaching Assistant, Deep Learning
Lecture Session on Neural Sequence Generation with CNTK.

Jul'15-May'18 Webmaster - CNeRG
Visit www.cnerg.org

Jan'17-May'17 Teaching Assistant, NPTEL online course on Natural Language Processing
Teaching Assistant for the online course hosted at NPTEL. Course Link.

Jul'15-Nov'17 Mentor - B.Tech and M.Tech Projects
Mentored projects for 7 B.Tech Projects and 6 M.Tech Projects

Talks

"Introduction to Machine Learning and Deep Learning". Talk at Amrita School of Arts and Science, Cochin, India.
- Lectures on Deep learning with Python at Machine Learning for Cyber Physical Systems, Executive course for TATA Steel, Centre for AI, IIT Kharagpur.
- Introduction to Jupyter, Foundations of Artificial Intelligence and Machine Learning, Centre for AI, IIT Kharagpur.
- Synthesising Grammars & Programs for Natural Language, Paradigm Shift in Indian Linguistics and its Implications for Applied Disciplines, IIAS Shimla, 30 Oct - 1 Nov 2017.
- "Hangman with Language Models", Hands-on Lab session at the ACM Summer School on Natural Language Processing and Machine Learning, IIT Kharagpur, 9th July 2017

- "A Dataset for Word Segmentation in Sanskrit", Workshop for Bridging the gap between Sanskrit Computational Linguistics tools and management of Sanskrit Digital Libraries, ICON, Dec. 18th 2016, IIT-BHU.
- "Automated Sanskrit Text Segmentation Aided by Statistical Analysis", Talk at ASTRA International Conference 2016, Deccan College, Pune.10th January 2016.
- "Named Entity Recognition in Bhagavatham with Rich Linguistic Features.",Talk at ASTRA International Conference 2016, Deccan College, Pune.10th January 2016.

Technical Skills

Programming Languages - Python, C, PHP, HTML5, CSS/JS
Operating System - Linux ,Windows
Libraries - PyTorch, CNTK, AllenNLP, TensorFlow, Pandas, Scikit-Learn, Scipy, Numpy
Natural Languages - Malayalam (Native), English, Hindi, Sanskrit

References

Dr. Animesh Mukherjee
Associate Professor ,
Dept. of Computer Science & Engg.
Indian Institute of Technology,Kharagpur.
Email:animeshm@gmail.com

Dr. Pawan Goyal
Assistant Professor
Dept. of Computer Science & Engg.
Indian Institute of Technology, Kharagpur.
Email: pawang@cse.iitkgp.ac.in