Abhisek Chakrabarty

AFFILIATION & CONTACT INFORMATION	Advanced Translation Technology Laboratory (ATT-ASTREC) National Institute of Information and Communications Technology (NICT) Website: https://att-astrec.nict.go.jp/en/ Address: 3-5 Hikaridai, Seika-cho, Soraku-gun, Kyoto, Japan, 619-0289 Email: abhisek0842@gmail.com, abhisek.chakra@nict.go.jp Mobile: +81 8024598346, WhatsApp: +91 9477046387 Personal Webpage: https://abhisek-chakrabarty.github.io/
OVERVIEW	I am a post-doctoral researcher at Advanced Translation Technology laboratory of NICT, Japan since July, 2019. My research focuses on developing automatic machine translation systems for low-resource Asian languages. More specifically, I explore deep neural network models to incorporate language morphology for improving translation quality. I am being mentored by Dr. Masao Utiyama, executive researcher of the laboratory.
RESEARCH INTERESTS	Natural Language Processing (NLP), Deep Learning.
TEACHING INTERESTS	Core Courses: Operating Systems, Data Structures, Database Management Systems. Advanced Courses: Natural Language Processing, Neural Networks.
POST-DOCTORAL RESEARCH EXPERIENCE	During the post-doctoral tenure, I investigate how to efficiently use different word-level morphological properties such as lemma, part-of-speech, parsing information etc. to enhance translation performance for low-resource languages. As resource scarce languages lack large amount of parallel data, so using morphology proves to be beneficial for translation task. In addition, I work on multilingual translation and adversarial training of translation models.
PH.D RESEARCH	I obtained PhD from Indian Statistical Institute (ISI), Kolkata, India in April, 2019. The research field was computational linguistics. My PhD dissertation focused on building lemmatizer and morphological analyzer for Indic languages and it was supervised by Dr. Utpal Garain, Professor at Computer Vision and Pattern Recognition Unit, ISI.

MANUSCRIPTS UNDER PROCESS

1. Abhisek Chakrabarty, Raj Dabre, Chenchen Ding, Masao Utiyama and Eiichiro Sumita, 'Low-Resource Multilingual Neural Translation Using Linguistic Feature Based Relevance Mechanisms', In ACM Transactions on Asian and Low-Resource Language Information Processing (TALLIP) (Revision submitted).

JOURNAL PUBLICATIONS

1. Akshay Chaturvedi, Abhisek Chakrabarty, Masao Utiyama, Eiichiro Sumita and Utpal Garain, 'Ignorance is Bliss: Exploring Defenses Against Invariance-based Attacks on NMT Systems', In IEEE Transactions on Artificial Intelligence (IEEE-TAI), November 2021, https://doi.org/10.1109/TAI.2021.3123931.

2. Abhisek Chakrabarty, Akshay Chaturvedi and Utpal Garain, 'NeuMorph: Neural Morphological Tagging for Low-Resource Languages - An Experimental Study for Indic Languages', In ACM Transactions on Asian and Low-Resource Language Information Processing (TALLIP), Volume 19 Issue 1, August 2019, https://doi.org/10.1145/3342354.

3. Abhisek Chakrabarty and Utpal Garain, 'BenLem (A Bengali Lemmatizer) and Its Role in WSD', In ACM Transactions on Asian and Low-Resource Language Information Processing (TALLIP), Volume 15 Issue 3, March 2016, http://dx.doi.org/10.1145/2835494.

CONFERENCE
PUBLICATIONS

1. Abhisek Chakrabarty, Raj Dabre, Chenchen Ding, Masao Utiyama and Eiichiro Sumita, 'Improving Low-Resource NMT through Relevance Based Linguistic Features Incorporation', In Proceedings of the International Conference on Computational Linguistics (Long Papers, COLING), 2020, https://doi.org/10.18653/v1/2020.coling-main.376.

2. Abhisek Chakrabarty, Akshay Chaturvedi and Utpal Garain, 'CNN-based Context Sensitive Lemmatization', In Proceedings of the ACM India Joint International Conference on Data Science & Management of Data (CoDS-COMAD), 2019, https://doi.org/10.1145/3297001.3297054.

3. Abhisek Chakrabarty, Onkar Arun Pandit and Utpal Garain, 'Context Sensitive Lemmatization Using Two Successive Bidirectional Gated Recurrent Networks', In Proceedings of the 55th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers, ACL), 2017, https://doi.org/10.18653/v1/P17-1136.

4. Abhisek Chakrabarty, Akshay Chaturvedi and Utpal Garain, 'A Neural Lemmatizer for Bengali', In Proceedings of the Language Resources and Evaluation Conference (LREC), 2016, url: https://www.aclweb.org/anthology/L16-1406.

WORKSHOP
PUBLICATIONS

1. Raj Dabre, Abhisek Chakrabarty, 'NICT-5's Submission To WAT 2021: MBART Pre-training And In-Domain Fine Tuning For Indic Languages', Workshop on Asian Translation (WAT), 2021.

2. Raj Dabre, Abhisek Chakrabarty, 'NICT's Submission To WAT 2020: How Effective Are Simple Many-To-Many Neural Machine Translation Models?', Workshop on Asian Translation (WAT), 2020.

3. Abhisek Chakrabarty and Utpal Garain, 'ISI at the SIGMORPHON 2017 Shared Task on Morphological Reinflection', CoNLL-SIGMORPHON 2017 Shared Task.

TEACHING AND
OTHER ACADEMIC
EXPERIENCE

1. Worked as a teaching assistant for the subject 'Natural Language Processing' under the curriculum of M. Tech in Computer Science course at Indian Statistical Institute, Kolkata during the years 2013-2014 to 2017-2018.

2. Held the treasurer position of ACM Student Chapter, Indian Statistical Institute from January, 2015 to January, 2016.

INDUSTRY
EXPERIENCE

Worked as a technical consultant in Z & A Infotek Private Limited (www.znainc.com) from June to August, 2018. The goal of the project was to find Bayesian solution for the record linkage and de-duplication problem.

AWARD AND
FELLOWSHIPS

1. Achieved Google India Student Travel Grant for presenting the paper 'Context Sensitive Lemmatization Using Two Successive Bidirectional Gated Recurrent Networks' at 55th ACL Conference, 2017, Vancouver, Canada.

2. Achieved 'special mention award' at ACM CoDS-COMAD, 2019 for the paper 'CNN-based Context Sensitive Lemmatization'.

3. Obtained research fellowship from Indian Statistical Institute, Kolkata from 2012-2019 during PhD.

4. Qualified University Grants Commission National Eligibility Test (UGC-NET) in 2012.

5. Obtained Graduate Aptitude Test in Engineering (GATE) fellowship during Master of Engineering (2010-2012).

TECHNICAL SKILLS

1. Programming Languages: Python, Java, C, Shell Script.

2. Operating Systems: Linux, Windows.

3. Libraries: PyTorch, Keras, Pandas, Scikit-learn.

EDUCATION

1. Obtained PhD in Computer Science from Indian Statistical Institute, Kolkata, 26th April, 2019.

2. Obtained 75.38% in Master of Engineering in Information Technology, from the Department of Information Technology, Bengal Engineering and Science University, Shibpur, June, 2012.

3. Obtained DGPA 8.39 in Bachelor of Technology in Computer Science and Engineering, from M.C.K.V Institute of Engineering, West Bengal University of Technology, August, 2009.

4. Obtained 80.30% in Higher Secondary (10+2) Examination in Science (Physics, Chemistry, Mathematics, Biology), under West Bengal Council for Higher Secondary Education, June, 2005.

5. Obtained 80.75% in Secondary (10th Class) Examination, under West Bengal Board of Secondary Education, June, 2003.

PERSONAL
PROFILE

Date of Birth:	24th April, 1987
Father's Name:	Ahit Kumar Chakrabarty
Mother's Name:	Pronati Chakrabarty
Gender:	Male
Blood Group:	A Positive
Marital Status:	Single
Languages Known:	Bengali, English and Hindi
Permanent Address:	Engineer Bagan (East Block)
City:	Chinsurah-712101
Nationality:	Indian

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