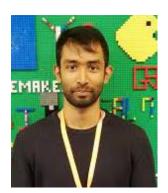# Bharathi Raja Asoka Chakravarthi

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Newcastle,
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Republic of Ireland.
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Education

Postgraduate Certificate (Teaching and Learning in Higher Education) (September 2021-)
NATIONAL UNIVERSITY OF IRELAND, GALWAY

▶ Completed

Ph.D. (Computer Science and Engineering) (September 2016- July 2020)
INSIGHT SFI RESEARCH CENTRE FOR DATA ANALYTICS, DATA SCIENCE INSTITUTE, NATIONAL UNIVERSITY OF IRELAND, GALWAY

▶ Thesis: Leveraging Orthographic Information to improve the Machine Translation of Under-resourced Languages (https://aran.library.nuigalway.ie/handle/10379/16100).

M.Sc. (Computational Science) (July 2013- July 2015)
INDIAN INSTITUTE OF INFORMATION TECHNOLGY & MANAGEMENT-KERALA, INDIA

▶ GPA: 9.36/10.00 [First Class with Distinction]

▶ Project: Reconstruction of Limit Order Book for NSE (Grade:10.00/10.00).

B.Tech. (Agricultural Information Technology) (July 2007- May 2011)
TAMIL NADU AGRICULTURAL UNIVERSITY, COIMBATORE-641003, INDIA

▶ GPA: 8.75/10.00 [First Class Honours]

▶ Project : Exploring potential of Global WRF for Seasonal Climate Prediction (Grade:10.00/10.00).

HIGHER SECONDARY SCHOOL EXAMINATION (2006-2007)
MCHSS, MADURAI, INDIA

▶ Grade: 80.66 %

▶ Subjects: Tamil, English, Mathematics, Physics, Chemistry, Computer Science.

Research Interests

▶ Natural Language Processing and Multimodal Machine Learning

▶ Data Analytics and Machine Learning

Awards and Honors

▶ Best Application Paper Award for paper "Classification Benchmarks for Under-resourced Bengali Language based on Multichannel Convolutional-LSTM Network" by The 7th IEEE International Conference on Data Science and Advanced Analytics (IEEE DSAA'2020).

▶ Postdoctoral (September 2020- December 2021) funded by Science Foundation Ireland, co-funded by the Irish Research Council and European Regional Development Fund.

▶ Selected as ACM Future Computing Academy member 2019-2021.

▶ Ph.D. (September 2016- July 2020) funded by Science Foundation Ireland, co-funded by the European Regional Development Fund, and the Enterprise Ireland (EI) Innovation Partnership Programme.

▶ Passed International English Language Testing System (IELTS) (Score: 7/9) jointly conducted by the British Council, IDP: IELTS Australia and Cambridge Assessment English (2016).

▶ Ranked first in University exams for Master Degree in Computational Science.

▶ Speed-IT scholarship for pursuing M.Sc. (Computational Science) during 2013-2015, in Indian Institute of Information Technology & Management-Kerala, funded by Government of Kerala, India.

▶ Qualified Graduate Aptitude Test in Engineering (Computer Science and Engineering), 2012, conducted by Department of Higher Education, Ministry of Human Resource Development (MHRD), Government of India (GoI).

▶ Secured Internship at National Centre for Medium Range Weather Forecasting (NCMRWF), Ministry of Earth Sciences, Government of India, during my B.Tech final year.

Experience:

▶ Lecturer (Part-Time) (Feb, 2022- present) at Griffith College Limerick, Ireland

▶ Guest Lecturer (Jan, 2021- Dec, 2021) at Indian Institute of Information Technology and Management- Kerala

▶ Associate Lecturer (Nov, 2020- Feb, 2022) at School of Computer Science, National College of Ireland Dublin.

▶ Adjunct Lecturer (Sep, 2020- present) at School of Computer Science, National University of Ireland Galway.

▶ Postdoctoral at (Sep, 2020- present) at Insight SFI Research Centre for Data Analytics, National University of Ireland Galway. Working on Industry project "Translation Across Borders" with ADAPT Centre, Dublin City University, Dublin and on Irish Research Council Project "*Comparative Deep Models of Language for Minority and Historical Languages*".

▶ Lecturer (Part-Time) (Jan, 2020- Aug, 2020) at Dublin Business School, Ireland

▶ Ph.D. Student (Sep, 2016 - Aug, 2020) at Insight SFI Research Centre for Data Analytics, National University of Ireland Galway. Working on thesis entitled *"Leveraging Orthographic Information to improve the Machine Translation of Under-resourced Language*". Worked on Industry Project entitled

Neural Machine Translation for Under-Resourced Scenarios and on Irish Research Council Project "*Comparative Deep Models of Language for Minority and Historical Languages*".

▸ Research Associate (Sep, 2015 - June, 2016) at Indian Institute of Information Technology (IIIT), Sri City. During this period I worked on study of Code-Mixed Data on Indian Social Media which was collected from Twitter data using Twitter API. This involved developing, implementing, and using a broad set of machine-learning models and quantitative techniques for prediction and classification of Code-Mixing using Weka and Java. I was also a Teaching Assistant for an Operating Systems course.

▸ Worked as a Research Associate at Indian Institute of Management-Udaipur in project entitled "*Impact of Algorithmic Trading on Capital Market Microstructure*" from January, 2015 to August, 2015. As first step we simulated Indian Limit Order Book dynamics. The aim of the project was to construct a framework that captures the dynamics of limit order book in the Indian stock markets modeled on the set of previous historical data.

▸ Worked as a Junior Research Fellow at the Agro Climate Research Centre, Tamil Nadu Agricultural University, India, on the DST-GOI research project entitled *"Climate Change: Assessing impacts and developing Adaptation Strategies for Agriculture in Tamil Nadu"* from February, 2012 to June, 2013. I applied my programming skill using, FORTRAN/Perl and Shell Scripting for extracting the climate change scenarios (Base line Period: 1980-2000, Mid Century: 2021-2050 and End Century: 2080-2100) generated in the ECHAM climate model (Atmospheric General Circulation Model) for Tamil Nadu.

▸ Internship entitled *"Scalability Analysis Of Weather Research Forecast Model on Parallel Computers"* under the guidance of B. Athiyaman, Scientist-F & Head, Computer & Networking Division, Ministry of Earth Sciences, Noida and Dr. Sudhakar Yerneni, Country Manager, Cray, New Delhi, in National Centre for Medium Range Weather Forecasting, Noida from August 2010 to November 2010. During the internship period I learned about the architecture of the IBM P6-575 42 node system and worked on this for executing parallel programs using POE. I submitted and managed parallel jobs using Loadleveler, setup the environment, and installed NetCDF, MPICH library, and WRF-ARW model. The project also involved running and measuring scalability of the WRF-ARW model.

Research Grants:

▸ Enterprise Ireland H2020 Co-ordinator Proposal Preparation Support Scheme (€12,018) for forming EU Consortium "HIRE-FAIR".

▸ Formed EU Consortium on topic "HIRE-FAIR: Intelligent Text Processing and KG solutions For Alleviating Bias in recruiting" for "Call: HORIZON-CL4-2021-HUMAN-01 (A HUMAN-CENTRED AND ETHICAL DEVELOPMENT OF DIGITAL AND INDUSTRIAL TECHNOLOGIES 2021)" and applied .

▸ European Language Grid (ELG) "Observatory for Less-Resourced Languages Across Multiple Modalities" (not accepted).

Project work

▸ NexusLinguarum is to promote synergies across Europe between linguists, computer scientists, terminologists, and other stakeholders in industry and society, in order to investigate and extend the

area of linguistic data science (2021-)

▶ Translators without Borders-ADAPT Collaborative Project (2021)

▶ IRC Cardamom Consolidator Laureate (2020-) The Cardamom project aims to close the resource gap for minority and under-resourced languages by means of deep-learning-based natural language processing (NLP) and exploiting similarities of closely-related languages. The project further extends this idea to historical languages, which can be considered as closely related to their modern form, and as such aims to provide NLP through both space and time for languages that have been ignored by current approaches.

▶ Prêt-à-LLOD (H2020 ICT-29b, Jan 2019-2022). "Ready-to-use Multilingual Linked Language Data for Knowledge Services across Sectors.

▶ ELEXIS (H2020 INFRAIA-01-2016-2017, Jan 2018-2022), "European Lexicographic Infrastructure". Partner Funding

▶ NURS - The project focused on neural machine translation (NMT) for under-resourced scenarios, i.e. languages or technical domains, using sequence-to-sequence models

▶ Masters Project: "*Impact of Algorithmic Trading on Capital Market Microstructure*" from January, 2015 to August, 2015. To analyze historical order data of magnitudes in terabytes. As a first step we simulated Indian Limit order book dynamics. The aim of the project is to construct a framework that captures the dynamics of limit order book in the Indian stock markets modeled on the set of previous historical data. (Grade Point:10.00/10.00)

▶ B.Tech project "*Exploring potential of Global WRF for Seasonal Climate Prediction*" under the guidance of Dr. R. Jagannathan, Professor and Mr. R. Venkatachalam (Ass. Prof). Work. The project involved making global circulation runs using Global-WRF for predicting Northeast monsoon rainfall of Tamil Nadu through two way nesting using the High Performance Cluster available in the Agro Climate Research Centre. The work involved finding out the level of accuracy of the prediction by comparing with the observation from specific location data collected from AWS established under Tamil Nadu Agricultural Weather Network. (Grade Point:10.00/10.00).

Teaching Experience

▶ [2021-2022] 2122-CT1120 Algorithms, National University of Ireland Galway [Undergraduate-BA(IT)- Level-7-8].

▶ [2021-2022] 2122-CT5146 Natural Language Processing (Online), National University of Ireland Galway. [Masters and Advanced Undergraduate Level-9]

▶ [2021-2022] 2122-CT5162 Business Intelligence (with Dr. Adrian Clear), National University of Ireland Galway [Higher Diploma in Data Analytics and Visualization- Level-8].

▶ [2021-2022] 2122- Operating System Design, Griffith College Limerick [Undergraduate-BSc(Computer Science)- Level-7-8].

▶ [2021-2022] 2122- Computer Programming (Java), Griffith College Limerick [Undergraduate-

BSc(Computer Science)- Level-7-8].

- ▶ [2021-2022] Data Mining and Machine Learning II, National College of Ireland Dublin [Post Graduate Diploma in Data Analytics-Level-9]
- ▶ [2020-2021] Project, National College of Ireland Dublin [Higher Diploma in Data Analytics-Level-8]
- ▶ [2020-2021] Data Intensive Architectures , National College of Ireland Dublin [Post Graduate Diploma in Data Analytics- Level-9]
- ▶ [2020-2021] 2021-CS103 Introduction to Computer Science, National University of Ireland Galway [Undergraduate- Level-7-8]
- ▶ [2019-2020] Internet of Things- Course on Demand, Dublin Business School, Ireland [Professional Course].

Teaching Assistant Experience

- ▶ [2019-2020] 1920-CT5146 Natural Language Processing (Online) - Teaching Assistant, National University of Ireland Galway. [Masters and Advanced Undergraduate Level]
- ▶ [2018-2019] 1819-CT5121 Advanced Topics in Natural Language Processing- Teaching Assistant, National University of Ireland Galway. [Masters and Advanced Undergraduate Level]
- ▶ [2017-2018] 1718-CT5101 Natural Language Processing - Teaching Assistant, National University of Ireland Galway. [Masters and Advanced Undergraduate Level]
- ▶ [2016-2017] 1617-CT5101 Natural Language Processing - Teaching Assistant, National University of Ireland Galway. [Master and Advanced Undergraduate Level]
- ▶ [2015-2016] Operating Systems- Teaching Assistant, Indian Institute of Information Technology Sri City. [Undergraduate Level]
- ▶ [2010-2011] FORTRAN Programming- Teaching Assistant, Tamil Nadu Agricultural University, Coimbatore. [Undergraduate Level]

Taught Master (Minor Thesis) Supervision

- ▶ Jorden Anthon Lopes, National College of Ireland Dublin (2021-2022) Title: "Empirical Study and Forecasting Tesla Stock Prices using Sentimental Analysis and deep learning methods"
- ▶ Sakshi Dubey, National College of Ireland Dublin (2021-2022) Title: "A comparative study of breast cancer diagnosis and classification using neural networks and machine learning models"
- ▶ Pooja Chopra, National College of Ireland Dublin (2021-2022) Title: "Crack detection using edge detection and transfer learning models"
- ▶ Saranya Varshni Karthikha, National College of Ireland Dublin (2021-2022) Title: "Forecasting Energy generation in Spain from renewable sources using time series and neural network models"
- ▶ Saurabh Sharma, National College of Ireland Dublin (2021-2022) Title: "Efficacy of deep learning model for plant disease classification with limited data"
- ▶ Shubham Sharma, National College of Ireland Dublin (2021-2022) Title: "A study of analytical

algorithms in football for prediction of results"

- ▶ Srivathsav Venugopal, National College of Ireland Dublin (2021-2022) Title: "A study over supervised and unsupervised learning in predicting the impact of bird strike in aviation industry"

- ▶ Tejveer Singh Goraya, National College of Ireland Dublin (2021-2022) Title: "Short-term price movement prediction for stock market indexes and its applications"

- ▶ Vinay Reddy Pannala, National College of Ireland Dublin (2021-2022) Title: "Detection of Healthcare Frauds in Insurance industry by healthcare service providers"

- ▶ Vineet Manoj Sawant, National College of Ireland Dublin (2021-2022) Title: "Forecasting carbon dioxide emission from energy consumption within the industrial sector in U.S."

- ▶ Vishnu Venugopal Palakkath. National College of Ireland Dublin (2021-2022) Title: "Few shot learning approach to online Malayalam handwritten character recognition"

- ▶ Dharavi Rasikbhai Sorathiya, National College of Ireland Dublin (2021-2022) Title: "Gujarati Handwritten Character Recognition using Convolution Neural Network"

- ▶ Abhishek Ramprasad, National College of Ireland Dublin (2020-2021) Title: "Understanding the suitable machine learning algorithms to detect healthcare frauds"

- ▶ Aman Khanna, National College of Ireland Dublin (2020-2021) Title: "Classification of Pneumonia disease from chest X-rays using deep learning"

- ▶ Ameya Satish Dalal, National College of Ireland Dublin (2020-2021) Title: "Diagnosing ocular disease using deep learning techniques"

- ▶ Prathamesh Suresh Gaikar, National College of Ireland Dublin (2020-2021) Title: "Improving the performance of aspect based sentiment analysis using Transformer based techniques"

- ▶ Jignesh Anil Waghela, National College of Ireland Dublin (2020-2021) Title: "Identification of acute Lymphocytic Leukemia through microscopic images of blood samples"

- ▶ Priyanka Gupta, National College of Ireland Dublin (2020-2021) Title: "Leveraging transfer learning techniques- BERT, RoBERTa, ALBERT, and DistilBERT for fake review detection"

- ▶ Ruchita Dattatray Patil, National College of Ireland Dublin (2020-2021) Title: "Predicting air quality index using machine learning and deep learning"

- ▶ Syed Mohammad, National College of Ireland Dublin (2020-2021) Title: "Prediction of changes in electrical power consumption using machine learning"

- ▶ Tushar Vasant Patil, National College of Ireland Dublin (2020-2021) Title: "Credit card fraud detection using CT-GAN and supervised machine learning techniques"

- ▶ Vivek Ravindran Nair, National College of Ireland Dublin (2020-2021) Title: "A GUI enabled emotion based music recommendation system using deep learning"

Student Co-supervision

- Shubhanker Banerjee, PhD., 2021-, National University of Ireland Galway (co-supervising with Dr. John P. McCrae)

- Gautham Vadakkekara Suresh, M.Sc Thesis 2020-2021, National University of Ireland Galway (co-supervised with Dr. John P. McCrae) Title: "Offensive language detection in code-mixed text"

- Shubhanker Banerjee, M.Sc Thesis 2020-2021, National University of Ireland Galway (co-supervised with Dr. John P. McCrae) Title: "Phonetic Transcription of Celtic Languages"

- Anjali A Prasad, M.Phil Thesis 2020-2021, Indian Institute Of Information Technology and Management (co-supervised with Prof. Elizabeth Sherly) Title: "Effective Fake News Detection using Enhanced BERT Algorithm"

- Saurabh Hebbalkar, M.Sc Thesis 2019-2020, National University of Ireland Galway (co-supervised with Dr. John P. McCrae) Title: "Multimodal Machine Translation"

Student Mentoring

- Shardul Shuryawanshi, Ph.D., 2019-2022 National University of Ireland Galway

- Priya Rani, Ph.D., 2019-2022 National University of Ireland Galway

- Koustava Goswami, Ph.D., 2019-2022 National University of Ireland Galway

- Mani Vegupatti M.Sc Thesis 2019-20, National University of Ireland Galway

- Navya Jose M.Sc Project 2018-20, Indian Institute of Information Technology & Management, Kerala, India

- Shardul Shuryawanshi, M.Sc Thesis 2018-19, National University of Ireland Galway

- Pranav Verma M.Sc Thesis 2018-19, National University of Ireland Galway

Selected Publications (for recent up to date publication list please visit https://scholar.google.com/citations?user=irCl028AAAAJ&hl=en)

Total Citations: 1901; h-index: 28

Journal Papers:

- **Chakravarthi, Bharathi Raja**, Ruba Priyadharshini, Vigneshwaran Muralidaran, Navya Jose, Shardul Suryawanshi, Elizabeth Sherly, and John P. McCrae. "Dravidiancodemix: Sentiment analysis and offensive language identification dataset for Dravidian languages in code-mixed text." Language Resources and Evaluation (2022): 1-42.

- **Chakravarthi, Bharathi Raja,** Priya Rani, Mihael Arcan, and John P. McCrae. "A survey of orthographic information in machine translation." SN Computer Science 2, no. 4 (2021): 1-19.

- Subramanian, Malliga, Rahul Ponnusamy, Sean Benhur, Kogilvani Shanmugavadivel, Adhithiya Ganesan, Deepti Ravi, Gowtham Krishnan Shanmugasundaram, Ruba Priyadharshini, and **Bharathi Raja Chakravarthi.** "Offensive language detection in Tamil YouTube comments by adapters and cross-domain knowledge transfer." Computer Speech & Language (2022): 101404.

- Hande, Adeep, Siddhanth U. Hegde, and **Bharathi Raja Chakravarthi.** "Multi-Task Learning in Under-Resourced Dravidian Languages." Journal of Data, Information and Management (Accepted).

- Suryawanshi, Shardul, **Bharathi Raja Chakravarthi,** Mihael Arcan, Suzanne Little, and Paul Buitelaar. "TrollsWithOpinion: A Dataset for Predicting Domain-specific Opinion Manipulation in Troll Memes." Multimedia Tools and Applications (Accepted).

- **Chakravarthi, Bharathi Raja.** "Multilingual Hope Speech Detection in English and Dravidian Languages." International Journal of Data Science and Analytics (Accepted).

- Hande, Adeep, Karthik Puranik, Konthala Yasaswini, Ruba Priyadharshini, Sajeetha Thavareesan, Anbukkarasi Sampath, Kogilavani Shanmugavadivel, Durairaj Thenmozhi, and **Bharathi Raja Chakravarthi.** "Offensive Language Identification in Low-resourced Code-mixed Dravidian languages using Pseudo-labeling." Computer Speech and Language (Under review).

- **Chakravarthi, Bharathi Raja,** Ruba Priyadharshini, Rahul Ponnusamy, Prasanna Kumar Kumaresan, Kayalvizhi Sampath, Durairaj Thenmozhi, Sathiyaraj Thangasamy, Rajendran Nallathambi, and John Phillip McCrae. "Dataset for Identification of Homophobia and Transophobia in Multilingual YouTube Comments." Natural Language Engineering (Cambridge University Press) (Under review).

- Hande, Adeep, Siddhanth U. Hegde, Ruba Priyadharshini, Rahul Ponnusamy, Prasanna Kumar Kumaresan, Sajeetha Thavareesan, and **Bharathi Raja Chakravarthi.** "Benchmarking multi-task learning for sentiment analysis and offensive language identification in under-resourced Dravidian languages." Soft Computing (Under review).

- Hegde, Siddhanth U., Adeep Hande, Ruba Priyadharshini, Sajeetha Thavareesan, Ratnasingam Sakuntharaj, Sathiyaraj Thangasamy, B. Bharathi, and **Bharathi Raja Chakravarthi**. "Do Images really do the Talking? Analysing the significance of Images in Tamil Troll meme classification." Advances in Computational Intelligence (Under review).

- **Chakravarthi, Bharathi Raja**, K. P. Soman, Rahul Ponnusamy, Prasanna Kumar Kumaresan, Kingston Pal Thamburaj, and John P. McCrae. "DravidianMultiModality: A Dataset for Multi-modal Sentiment Analysis in Tamil and Malayalam." Language Resource and Evaluation (Under review).

Conference and Workshop papers:

- **Chakravarthi, Bharathi Raja**, and Vigneshwaran Muralidaran. "Findings of the shared task on Hope Speech Detection for Equality, Diversity, and Inclusion." In Proceedings of the First Workshop on Language Technology for Equality, Diversity and Inclusion, pp. 61-72. 2021.

- **Chakravarthi, Bharathi Raja**, Ruba Priyadharshini, Navya Jose, Thomas Mandl, Prasanna Kumar Kumaresan, Rahul Ponnusamy, R. L. Hariharan, John Philip McCrae, and Elizabeth Sherly. "Findings of the shared task on offensive language identification in Tamil, Malayalam, and Kannada." In Proceedings of the First Workshop on Speech and Language Technologies for Dravidian Languages, pp. 133-145. 2021.

- **Chakravarthi, Bharathi Raja,** Ruba Priyadharshini, Shubhanker Banerjee, Richard Saldanha, John Philip McCrae, Parameswari Krishnamurthy, and Melvin Johnson. "Findings of the Shared Task on

Machine Translation in Dravidian languages." In Proceedings of the First Workshop on Speech and Language Technologies for Dravidian Languages, pp. 119-125. 2021.

▸ **Chakravarthi, Bharathi Raja**, Gaman Mihaela, Radu Tudor Ionescu, Heidi Jauhiainen, Tommi Jauhiainen, Krister Lindén, Nikola Ljubešić et al. "Findings of the VarDial Evaluation Campaign 2021." In Proceedings of the Eighth Workshop on NLP for Similar Languages, Varieties and Dialects, pp. 1-11. 2021.

▸ Kumar, Senthil, Aravindan Chandrabose, and **Bharathi Raja Chakravarthi**. "An Overview of Fairness in Data–Illuminating the Bias in Data Pipeline." In Proceedings of the First Workshop on Language Technology for Equality, Diversity and Inclusion, pp. 34-45. 2021.

▸ Suryawanshi, Shardul, and **Bharathi Raja Chakravarthi**. "Findings of the shared task on Troll Meme Classification in Tamil." In Proceedings of the First Workshop on Speech and Language Technologies for Dravidian Languages, pp. 126-132. 2021.

▸ Kalyan, Pawan, Duddukunta Reddy, Adeep Hande, Ruba Priyadharshini, Ratnasingam Sakuntharaj, and **Bharathi Raja Chakravarthi**. "IIITT at CASE 2021 task 1: Leveraging pretrained language models for multilingual protest detection." In Proceedings of the 4th Workshop on Challenges and Applications of Automated Extraction of Socio-political Events from Text (CASE 2021), pp. 98-104. 2021.

▸ Yasaswini, Konthala, Karthik Puranik, Adeep Hande, Ruba Priyadharshini, Sajeetha Thavareesan, and **Bharathi Raja Chakravarthi.** "IIITT@ DravidianLangTech-EACL2021: Transfer Learning for Offensive Language Detection in Dravidian Languages." In Proceedings of the First Workshop on Speech and Language Technologies for Dravidian Languages, pp. 187-194. 2021.

▸ Ojha, Atul Kr, Priya Rani, Koustava Goswami, **Bharathi Raja Chakravarthi**, and John Philip McCrae. "ULD-NUIG at Social Media Mining for Health Applications (# SMM4H) Shared Task 2021." In Proceedings of the Sixth Social Media Mining for Health (# SMM4H) Workshop and Shared Task, pp. 149-152. 2021.

▸ Ghanghor, Nikhil, Parameswari Krishnamurthy, Sajeetha Thavareesan, Ruba Priyadharshini, and **Bharathi Raja Chakravarthi.** "IIITK@ DravidianLangTech-EACL2021: Offensive Language Identification and Meme Classification in Tamil, Malayalam and Kannada." In Proceedings of the First Workshop on Speech and Language Technologies for Dravidian Languages, pp. 222-229. 2021.

▸ Hande, Adeep, Karthik Puranik, Ruba Priyadharshini, and **Bharathi Raja Chakravarthi**. "Domain identification of scientific articles using transfer learning and ensembles." In Pacific-Asia Conference on Knowledge Discovery and Data Mining, pp. 88-97. Springer, Cham, 2021.

▸ Puranik, Karthik, Adeep Hande, Ruba Priyadharshini, Thenmozi Durairaj, Anbukkarasi Sampath, Kingston Pal Thamburaj, and **Bharathi Raja Chakravarthi**. "Attentive fine-tuning of Transformers for Translation of low-resourced languages@ LoResMT 2021." In Proceedings of the 4th Workshop on Technologies for MT of Low Resource Languages (LoResMT2021), pp. 134-143. 2021.

▸ Ghanghor, Nikhil, Rahul Ponnusamy, Prasanna Kumar Kumaresan, Ruba Priyadharshini, Sajeetha Thavareesan, and **Bharathi Raja Chakravarthi**. "IIITK@ LT-EDI-EACL2021: Hope Speech Detection for Equality, Diversity, and Inclusion in Tamil, Malayalam and English." In Proceedings of the

First Workshop on Language Technology for Equality, Diversity and Inclusion, pp. 197-203. 2021.

▶ Hande, Adeep, Karthik Puranik, Ruba Priyadharshini, Sajeetha Thavareesan, and **Bharathi Raja Chakravarthi.** "Evaluating Pretrained Transformer-based Models for COVID-19 Fake News Detection." In 2021 5th International Conference on Computing Methodologies and Communication (ICCMC), pp. 766-772. IEEE, 2021.

▶ Hegde, Siddhanth U., Adeep Hande, Ruba Priyadharshini, Sajeetha Thavareesan, and **Bharathi Raja Chakravarthi.** "UVCE-IIITT@ DravidianLangTech-EACL2021: Tamil Troll Meme Classification: You need to Pay more Attention." In Proceedings of the First Workshop on Speech and Language Technologies for Dravidian Languages, pp. 180-186. 2021.

▶ Puranik, Karthik, Adeep Hande, Ruba Priyadharshini, Sajeetha Thavareesan, and **Bharathi Raja Chakravarthi.** "IIITT@ LT-EDI-EACL2021-Hope Speech Detection: There is always hope in Transformers." In Proceedings of the First Workshop on Language Technology for Equality, Diversity and Inclusion, pp. 98-106. 2021.

▶ **Chakravarthi, Bharathi Raja**, Ruba Priyadharshini, Sajeetha Thavareesan, Dhivya Chinnappa, Durairaj Thenmozhi, Elizabeth Sherly, John P. McCrae et al. "Findings of the Sentiment Analysis of Dravidian Languages in Code-Mixed Text." In Forum for Information Retrieval Evaluation, pp. 29-32. 2021

▶ Banerjee, Shubhanker**, Bharathi Raja Chakravarthi**, and John P. McCrae. "Comparison of pretrained embeddings to identify hate speech in Indian code-mixed text." In 2020 2nd International Conference on Advances in Computing, Communication Control and Networking (ICACCCN), pp. 21-25. IEEE, 2020.

▶ **Chakravarthi, Bharathi Raja**, Ruba Priyadharshini, Vigneshwaran Muralidaran, Shardul Suryawanshi, Navya Jose, Elizabeth Sherly, and John P. McCrae. "Overview of the track on sentiment analysis for Dravidian languages in code-mixed text." In Forum for Information Retrieval Evaluation, pp. 21-24. 2020.

▶ Mandl, Thomas, Sandip Modha, Anand Kumar M, and **Bharathi Raja Chakravarthi**. "Overview of the HASOC track at FIRE 2020: Hate speech and offensive language identification in Tamil, Malayalam, Hindi, English and German." In Forum for Information Retrieval Evaluation, pp. 29-32. 2020.

▶ Hande, Adeep, Ruba Priyadharshini, and **Bharathi Raja Chakravarthi**. "KanCMD: Kannada CodeMixed dataset for sentiment analysis and offensive language detection." In Proceedings of the Third Workshop on Computational Modeling of People's Opinions, Personality, and Emotion's in Social Media, pp. 54-63. 2020.

▶ Karim, Md Rezaul, **Bharathi Raja Chakravarthi**, John P. McCrae, and Michael Cochez. "Classification benchmarks for under-resourced Bengali language based on multichannel convolutional-LSTM network." In 2020 IEEE 7th International Conference on Data Science and Advanced Analytics (DSAA), pp. 390-399. IEEE, 2020.

▶ Goswami, Koustava, Rajdeep Sarkar, **Bharathi Raja Chakravarthi**, Theodorus Fransen, and John Philip McCrae. "Unsupervised deep language and dialect identification for short texts." In Proceedings

of the 28th International Conference on Computational Linguistics, pp. 1606-1617. 2020.

▸ Ojha, Atul Kr, Priya Rani, Akanksha Bansal, **Bharathi Raja Chakravarthi**, Ritesh Kumar, and John Philip McCrae. "NUIG-Panlingua-KMI Hindi-Marathi MT Systems for Similar Language Translation Task@ WMT 2020." In Proceedings of the Fifth Conference on Machine Translation, pp. 418-423. 2020.

▸ **Chakravarthi, Bharathi Raja**. "HopeEDI: A multilingual hope speech detection dataset for equality, diversity, and inclusion." In Proceedings of the Third Workshop on Computational Modeling of People's Opinions, Personality, and Emotion's in Social Media, pp. 41-53. 2020.

▸ **Chakravarthi, Bharathi Raja**, Navaneethan Rajasekaran, Mihael Arcan, Kevin McGuinness, Noel E. O'Connor, and John Philip McCrae. "Bilingual lexicon induction across orthographically-distinct under-resourced Dravidian languages." In Proceedings of the 7th Workshop on NLP for Similar Languages, Varieties and Dialects, pp. 57-69. 2020.

▸ **Bharathi Raja Chakravarthi**, Navya Jose, Shardul Suryawanshi, Elizabeth Sherly and John P. McCrae "A Sentiment Analysis Dataset for Code-Mixed Malayalam-English," In Proceedings of the 1st Joint Workshop of SLTU (Spoken Language Technologies for Under-resourced languages) and CCURL (Collaboration and Computing for Under-Resourced Languages) (SLTU-CCURL 2020), co-located with 12th Edition of Language Resources and Evaluation Conference, Marseille, France, May, 2020.

▸ **Bharathi Raja Chakravarthi**, Vigneshwaran Muralidaran, Ruba Priyadharshini and John P. McCrae "Corpus Creation for Sentiment Analysis in Code-Mixed Tamil-English Text," In Proceedings of the 1st Joint Workshop of SLTU (Spoken Language Technologies for Under-resourced languages) and CCURL (Collaboration and Computing for Under-Resourced Languages) (SLTU-CCURL 2020), co-located with 12th Edition of Language Resources and Evaluation Conference, Marseille, France, May, 2020.

▸ Priya Rani, Shardul Suryawanshi, Koustava Goswami, **Bharathi Raja Chakravarthi**, Theodorus Fransen, and John P. McCrae "A Comparative Study of Different State-of-the-Art Hate Speech Detection Methods for Hindi-English Code-Mixed Data," In Proceedings of the TRAC-2: The Second Workshop on Trolling, Aggression \& Cyberbullying, co-located with 12th Edition of Language Resources and Evaluation Conference, Marseille, France, May, 2020.

▸ Shardul Suryawanshi, **Bharathi Raja Chakravarthi**, Mihael Arcan, Paul Buitelaar "Multimodal Meme Dataset (MultiOFF) for Identifying Offensive Content in Image and Text," In Proceedings of the TRAC-2: The Second Workshop on Trolling, Aggression \& Cyberbullying, co-located with 12th Edition of Language Resources and Evaluation Conference, Marseille, France, May, 2020.

▸ Shardul Suryawanshi, **Bharathi Raja Chakravarthi,** Mihael Arcan, Paul Buitelaar "A Dataset for Classification of Tamil Memes," In Proceedings of the 5th Workshop on Indian Language Data Resource and Evaluation (WILDRE-5), co-located with 12th Edition of Language Resources and Evaluation Conference, Marseille, France, May, 2020.

▸ Navya Jose, **Bharathi Raja Chakravarthi**, Shardul Suryawanshi, Elizabeth Sherly and John P.Mccrae "A Survey of Current Datasets for Code-Switching Research". In ICACCS 2020: International

Conference on Advanced Computing & Communication Systems (ICACCS) Tamil Nadu, India, March 6-7, 2020.

▶ Ruba Priyadharshini, **Bharathi Raja Chakravarthi**, Mani Vegupatti and John P.Mccrae "Named Entity Recognition for Code-Mixed Indian Corpus using Meta Embedding". In ICACCS 2020: International Conference on Advanced Computing & Communication Systems (ICACCS) Tamil Nadu, India, March 6-7, 2020.

▶ Daniel Torregrosa, Nivranshu Pasricha, Maraim Masoud, **Bharathi Raja Chakravarthi**, Juan Alonso, Noe Casas and Mihael Arcan *"Leveraging Rule-Based Machine Translation Knowledge for Under-Resourced Neural Machine Translation Models."* In Machine Translation Summit (MT-Summit 2019), Dublin, Ireland.

▶ **Bharathi Raja Chakravarthi**, Mihael Arcan, and John P. McCrae. *"WordNet Gloss Translation for Under-resourced Languages using Multilingual Neural Machine Translation."* In The Second Workshop on Multilingualism at the intersection of Knowledge Bases and Machine Translation co-located with Machine Translation Summit (MT-Summit 2019), Dublin, Ireland.

▶ **Bharathi Raja Chakravarthi**, Ruba Priyadharshini, Bernardo Stearns, Arun Jayapal, Sridevy S, Mihael Arcan, Manel Zarrouk, and John P. McCrae. *"Multilingual Multimodal Machine Translation for Dravidian Languages utilizing Phonetic Transcription."* In The Second Workshop on Technologies for MT of Low-Resource Languages co-located with Machine Translation Summit (MT-Summit 2019), Dublin, Ireland.

▶ **Bharathi Raja Chakravarthi**, Mihael Arcan, and John P. McCrae. "*Comparison of Different Orthographies for Machine Translation of Under-Resourced Dravidian Languages*." In 2nd Conference on Language, Data and Knowledge (LDK 2019). Schloss Dagstuhl-Leibniz-Zentrum fuer Informatik, 2019.

▶ **Bharathi Raja Chakravarthi**, Mihael Arcan, and John P. McCrae. "*Improving Wordnets for Under-Resourced Languages Using Machine Translation.*" In Proceedings of the 9th Global WordNet Conference (GWC 2018), p. 78. 2018.

Editor:

▶ Special Issue on Speech and Language Technologies for Dravidian Languages - Computer Speech and Language Journal (Elsevier)

▶ Special Issue on Language Technology for Equality, Diversity, and Inclusion - Language Resources and Evaluation Journal (Springer)

▶ Topical Issue on Machine Learning for Offensive and Highly Emotional Content on Social Media - SN Computer Science Journal (Springer)

▶ Special Issue on Cyber-Social Issues Prediction in Low-Resource Languages with Deep Internet of Things (DIoT)- ACM Transactions on Asian and Low-Resource Language Information Processing (TALLIP)

▶ Editorial board member - Journal of Natural Language Engineering - Special Issue on NLP Approaches to Offensive Content Online (Cambridge University Press)

Conference Organized

▶ SPELLL 2022 - 1st International Conference on Speech and Language Technologies for Low-resource Languages, 2022 (Springer -Scopus Indexed Proceeding)

Workshop and Tutorials Organized

▶ Second workshop on Language Technology for Equality, Diversity, and Inclusion, collocated with Association for Computational Linguistics, 2022 (Dublin, Ireland)

▶ Second workshop on Speech and Language Technologies for Dravidian Languages, collocated with Association for Computational Linguistics, 2022 (Dublin, Ireland)

▶ The First workshop on Language Technology for Equality, Diversity, and Inclusion, European Chapter of the Association for Computational Linguistics, April, 2021 (Online)

▶ The First Workshop on Speech and Language Technologies for Dravidian Languages, European Chapter of the Association for Computational Linguistics, April, 2021 (Online)

▶ Deep Learning with Tensorflow, Developers Forum, Data Science Institute, National University of Ireland Galway, 2020

▶ Deep Learning with Keras, Developers Forum, Data Science Institute, National University of Ireland Galway, 2019

▶ Deep Learning with PyTorch, Developers Forum, Data Science Institute, National University of Ireland Galway, 2019

Shared Tasks Organized

▶ Hope Speech Detection for Equality, Diversity, and Inclusion – LTEDI, 60th Annual Meeting of the Association for Computational Linguistics 2022

▶ Dravidian-CodeMix - Sentiment Analysis for Dravidian Languages in Code-Mixed Text (2020, 2021) at Forum for Information Retrieval Evaluation

▶ Offensive Language Identification for Dravidian Languages in Code-Mixed Text (2020, 2021) at Forum for Information Retrieval Evaluation

▶ Hope Speech Detection for Equality, Diversity, and Inclusion, LTEDI, European Chapter of the Association for Computational Linguistics (EACL) 2021.

▶ Shared Task on Machine Translation in Dravidian languages, DravidianLangTech, European Chapter of the Association for Computational Linguistics (EACL) 2021.

▶ Shared Task on Troll Meme Classification in Tamil, DravidianLangTech, European Chapter of the Association for Computational Linguistics (EACL) 2021.

▶ Shared Task on Offensive Language Identification in Tamil, Malayalam, and Kannada, DravidianLangTech, European Chapter of the Association for Computational Linguistics (EACL) 2021.

Reviewing Duties

- Computer Speech and Language Journal (Elsevier)

- Artificial Intelligence Review (Springer)

- Knowledge and Information Systems Journal (Springer)

- Semantic Web Journal (IOS Press)

- ACM Transactions on Asian and Low-Resource Language Information Processing

- The Machine Translation Journal (Springer)

- IEEE Transactions on Affective Computing

- Language Resources and Evaluation Journal (Springer)

- The SN Computer Science Journal (Springer)

Program Committee

- Association for Computational Linguistics (ACL 2021, 2022)

- International Conference on Human-Agent Interaction (HAI 2020, 2021)

- Annual Meeting of the Cognitive Science Society (CogSci-2020, 2021)

- International Global Wordnet Conference (2019, 2020, 2021)

- International AAAI Conference on Web and Social Media (2019, 2020, 2021)

- Twelfth International Conference on Natural Language Processing (ICON-2015)

- International Global Wordnet Conference (2019, 2020, 2021)

- First Workshop on Patent Text Mining and Semantic Technologies (PatentSemTech 2019)

- 4th Workshop on Challenges and Applications of Automated Extraction of Socio-political Events from Text (CASE 2021, 2022)

Technical Skills

Machine Learning and Deep Learning Framework	Keras-Tensorflow, PyTorch, Weka, scikit-learn
Natural Language Processing Toolkit	NLTK, OpenNMT, Moses
Programming Languages Known	Python, C, Java, FORTRAN 77,90
Web designing	HTML. CSS
GIS	ArcGIS 9.3 Desktop
DBMS	MySQl
	Oracle
Operating systems worked	Windows (Xp, Vista, 7,8)
	Mac OS,IBM AIX 5.3L
	LINUX(CentOS, Madriva, UBuntu)

Co-Curricular Activities

- Equality, Diversity and Inclusion (EDI) committee member at Data Science Institute, National University of Ireland, Galway from Jun 2019.

- ATHENA SWAN Student representative at Data Science Institute, National University of Ireland, Galway from Sep 2018.

- Member of Weightlifting Club at National University of Ireland, Galway from Jan 2017.

- Programme Committee Member of LGBT Society (GIGSoc) at National University of Ireland, Galway during Jan 2017- December 2017.

- Arts and Sports Club member during M.Sc at Indian Institute of Information Technology & Management-Kerala.

- Taking Home Tuition for 11th Student(Mathematics)(2014- 2014).

- Class representative of M.Sc (Computational Science).

- Placement cell secretary of B.Tech (AIT).

- Organized National level technical symposium "TRANSPIRE'09".

- Year representative of B.Tech(AIT) during 2009-2010.

- Runner in Ball badminton in Annual sports meet-2008.

- Participated and won prizes in Cultural Competitions (Classical dance).

- Participated in the seven days NSS Special Camping programme on the theme "Healthy youth for healthy India in Devarayapuram, Coimbatore".

Courses Studied in B.Tech (AIT)

Agriculture Courses.

- Orientation to Agricultural System, Soil and Crop Management, Commercial Horticulture, Plantation Management, Environment Management, Principles of Genetics, Introduction to Biotechnology, Remote Sensing and GIS application in Agriculture, Atmospheric Science.

IT Courses.

- Introduction to Computer Technology and Programming Languages, Fundamentals of Computers and Operating System, Design and Analysis of Algorithms and Data Structures, Computer Organization and Architecture, Probability and Information Systems, Compiler Design and Programming Languages, Computer Graphics,3D Modeling and Visualization and application, CAD and Multimedia Technology, Introduction to Database System and Design, Applications of RFID and WIFI Technology, Parallel Processing, Super Computing and Application, FORTRAN Programming, HPC Clusters and Parallel Computing for Simulations, FORTRAN programming for Parallel Computing, WRF Forecasting Model, Regional Climate Model(RegCM3).

Courses in M.Sc (CS)

- Differential Equations, Statistical Methods, Principles of Programming, Data Structure and Algorithm,

Operating System, Discrete Mathematics and Graph Theory, Theory of Computation, Computer Architecture and Organization, Object Oriented Programming, Computer Networking, Database Management System, Software Engineering, Computational Modeling, High Performance Computing and Computational Linguistics.

Courses in Structured Ph.D. (30 ECTS)

▶ Machine Learning and Data Mining, An Introduction to Teaching and Learning, Research Integrity, Journal Club Programme, Research Paper Publication, Oral/Poster Presentation.

Courses in MOOC

▶ Structuring Machine Learning Projects by deeplearninging.ai on Coursera. Certificate earned on July 2018. (https://www.coursera.org/account/accomplishments/verify/5JNVUK77QPPF)

▶ Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization by deeplearning.ai on Coursera. Certificate earned on March 2018 (https://www.coursera.org/account/accomplishments/verify/KQXEGMLVF4DD)

▶ Neural Networks and Deep Learning Issuing by deeplearning.ai on Coursera. Certificate earned on February 2018 (https://www.coursera.org/account/accomplishments/verify/LE75MT5VT6UP)

▶ Machine Learning Foundations: A Case Study Approach by University of Washington on Coursera. Certificate earned on May 2016 (https://www.coursera.org/account/accomplishments/verify/TKEKUJ42XYYN)

▶ An Introduction to Interactive Programming in Python (Part 1) by Rice University on Coursera. Certificate earned on July 13, 2015 (https://www.coursera.org/account/accomplishments/records/gCawbxy2j68tXSJx)

▶ Cluster Analysis in Data Mining by University of Illinois at Urbana-Champaign on Coursera. Certificate earned on June 10, 2015 (https://www.coursera.org/account/accomplishments/records/DVyCBHXz76J8BuVP).

▶ Big Data Fundamentals by Big Data University. Certificate earned on June 8, 2015.

▶ R Programming by Johns Hopkins University on Coursera. Certificate earned on May 12, 2015 (https://www.coursera.org/account/accomplishments/records/c8zH2Lgu9EJTzBdh).

▶ The Data Scientist's Toolbox by Johns Hopkins University on Coursera. Certificate earned on May 11, 2015 (https://www.coursera.org/account/accomplishments/records/E57GYQfeGt7vBDqL).

▶ Text Retrieval and Search Engines by University of Illinois at Urbana-Champaign on Coursera. Certificate earned on May 8, 2015 (https://www.coursera.org/account/accomplishments/records/YNWK9UzCATFQ884n).

▶ Machine Learning by Stanford University on Coursera. Certificate earned on May 1,2015.

▶ Logic: Language and Information 1 by The University of Melbourne on Coursera. Certificate earned on April 15, 2015 (https://www.coursera.org/account/accomplishments/records/ZtJUpsfpzS695ygW).

- Pattern Discovery in Data Mining by University of Illinois at Urbana-Champaign on Coursera. Certificate earned on March 19, 2015 (https://www.coursera.org/account/accomplishments/records/WM839E6DNGQwH2Fd).

- Programming for Everybody (Python) by University of Michigan on Coursera. Certificate earned on January 12, 2015.

Training Courses Attended

	Courses	Duration	Place
1	Internship training in Indian Meteorological Department	17.5.2010 to 21.5.2010	Indian Meteorological Department, Regional Meteorological Centre, Chennai.
2	Customizing ArcObjects 9.3 with VBA programming	15.2.2010 to 17.2.2010	INDIAN GEOINFORMATICS CENTER, Chennai
3	A Beginner's Course on GIS using ArcGIS	2.1.2010 to 6.1.2010	By INDIAN GEOINFORMATICS CENTER held at Tamil Nadu Agricultural University(TNAU), Coimbatore.
4	Leadership & Employability Acceleration Program(B-LEAP)	5 days	Bharathiya School of Management, Coimbatore.
5	Programming Using C++ (RegNo:R0800B9000424)	48 Hours	NIIT Acedamy, Coimbatore
6	Programming in C (RegNo:R0800B9000422)	32 Hours	NIIT Acedamy, Coimbatore
7	Advanced Diploma in Computer Hardware and Networking (RegNo:6023) (Grade: A-Excellent)	3.4.2006 to 10.8.2006	CSC Computer Education, Y.Othakkadai Centre, Madurai

References

- Dr. John P. McCrae

    Lecturer above-the-bar and Unit leader,

    Unit for Linguistic Data,

    Insight SFI Research Centre for Data Analytics,

Data Science Institute,

National University of Ireland Galway.

E-mail: John.McCrae@insight-centre.org

▶ Dr. Paul Buitelaar

Senior Lecturer and Unit Leader,

Unit for Natural Language Processing,

Insight SFI Research Centre for Data Analytics,

Data Science Institute,

National University of Ireland Galway.

E-mail: paul.buitelaar@insight-centre.org

▶ Prof. Micheal Madden

Established Professor and Head of School of Computer Science,

National University of Ireland Galway.

E-mail: michael.madden@nuigalway.ie

▶ Prof. V. Geethalakshmi

Vice Chancellor,

Tamil Nadu Agricultural University,

Coimbatore-641003, India

E-mail: geetha@tnau.ac.in

I hereby solemnly affirm that all the information provided above is true to the best of my knowledge and belief.

Yours Sincerely,

(Bharathi Raja Chakravarthi)