

Krishna Garg

PH.D. CANDIDATE · COMPUTER SCIENCE · UNIVERSITY OF ILLINOIS, CHICAGO

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Education

University of Illinois, Chicago

PH.D. IN COMPUTER SCIENCE

Chicago, IL

Fall 2018 - 2024

Birla Institute of Technology and Science

B.E. (HONS) IN COMPUTER SCIENCE

Pilani, India

Aug 2012 - May 2016

Research Interests

Natural Language Processing, Deep Learning, Keyphrase Generation, Stance Detection, Explainability, Calibration, Robustness

Publications

- Krishna Garg, and Cornelia Caragea. Target-Aware Transformer for Stance Detection. Under Review.
Stanceformer provides superior performance, more accurate evaluation, and efficient utilization of compute power compared to GPT-3.5, Llama-2-7b-chat, Llama-2-13b-chat, and other SOTA models. Preprint available by request.
- Krishna Garg*, Yingjie Li*, ¹, and Cornelia Caragea. 2023. A New Direction in Stance Detection: Target-Stance Extraction in the Wild. To appear at the Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics, Toronto, Canada. 📄 📄
- Krishna Garg, Jishnu Ray Chowdhury, and Cornelia Caragea. 2023. Data Augmentation for Low-Resource Keyphrase Generation. To appear at the Findings of the Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics, Toronto, Canada. 📄 📄
- Krishna Garg, Jishnu Ray Chowdhury, and Cornelia Caragea. 2022. Keyphrase Generation Beyond the Boundaries of Title and Abstract. In Findings of the Association for Computational Linguistics: EMNLP 2022, pages 5809–5821, Abu Dhabi, United Arab Emirates. Association for Computational Linguistics. 📄 📄

Research Experience

Graduate Research Assistant | Prof. Cornelia Caragea

- Keyphrase Generation, Stance Detection, Explainability, Robustness, Semi-Supervised Learning
- Papers accepted at ACL 2023, EMNLP 2022
- Also explored Text Generation, Summarization, Text-Style Transfer 📄, Neural Machine Translation 📄

UIC

May 21 - PRESENT

Graduate Research Assistant | Prof. Sathya Ravi

- Few-Shot Learning 📄
- Meta-Learning with Fairness Constraints 📄
- optim-meta: Benchmarking meta-learning algorithms 📄 📄

UIC

Jan 2020 - Dec 2020

Bachelor Thesis | Prof. Virendra S. Shekhawat

- Title: Multi-path Routing Algorithm for Intra-domain Routing in Network Simulator-3
- Open source code contributions to IPv4RoutingProtocol in NS-3

BITS Pilani

Aug 2015 - Dec 2015

¹* denotes equal contribution

Work Experience

Samsung Research Institute

ANDROIDOS DEVELOPER | AUDIOFRAMEWORK ENGINEER

Noida, India

July 2016 - May 2018

- *Bringup* of new Samsung smartphone models
- Contributions to Samsung proprietary software at Framework and Hardware Abstraction layers of Android Architecture
- Contributions in CarMode feature implementation for Samsung smartphones
- Development of new debugging tool in JAVA combining the debugging tool Elfa and the code browsing engine OpenGrok
- *Advanced* level certification in coding skills by Samsung Korea HQ

Central Public Works Department

SOFTWARE INTERN | TEAM LEAD

Mussoorie, India

May 2014 - July 2014

- Development of Billing and Accounting Software in JAVA that replaced accounting on excel sheets
- Development of android application CivilCalculator to enable civil engineers to calculate raw materials on construction sites
- Professional Recognition and Certificate of Excellence from executive engineer Mr. Hitesh Kejriwal

Teaching Experience

Spring '24	Graduate Teaching Assistant , CS 341: Programming Language Design and Implementation	UIC
Fall '23	Graduate Teaching Assistant , CS 341: Programming Language Design and Implementation	UIC
Spring '23	Graduate Teaching Assistant , CS 111: Programming Design I	UIC
Fall '22	Graduate Teaching Assistant , CS 251: Data Structures	UIC
Sum '22	Graduate Teaching Assistant , CS 480: Database Systems	UIC
Spring '21	Graduate Teaching Assistant , CS 362: Computer Design	UIC
Spring '20	Graduate Teaching Assistant , CS 341: Programming Language Design and Implementation	UIC
Fall '19	Graduate Teaching Assistant , CS 476: Programming Language Design	UIC
Fall '19	Graduate Teaching Assistant , CS 111: Program Design I, Legal and Public Policy Themes Section	UIC
Fall '18	Graduate Teaching Assistant , CS 341: Programming Language Design and Implementation	UIC

Relevant Coursework

CS 412: Intro to Machine Learning 	UIC
CS 559: Neural Networks 	UIC
CS 594: Language and Vision	UIC
CS 415: Computer Vision I	UIC
ECE 594: Convex Optimization 	UIC
CS 594: Learning and Optimization in Vision	UIC
CS 401: Computer Algorithms I	UIC
MATH 320: Linear Algebra	UIC
Pytorch for Deep learning and Computer Vision	Udemy
Deep Learning Specialization	Coursera
IBM Data Science Specialization	Coursera

Other Projects

Disaster-Related Tweet Classification

- BERT-based models for classification of Tweets to facilitate disaster management

Hand Gesture Recognition

- Using OpenCV2 library and Deep Learning based methods

Visual Dialog: A Survey

- Survey paper on recent advances in Visual Dialog task

Travello

- Extracting Addresses from Unstructured Text (e.g. restaurant blogs) using Deep Learning Models like LSTM & BERT

Named Entity Recognition

- PyTorch-based project to train a classifier to recognize entities like person, geographical entity, event, location, etc.

Skills

Programming	Python
DevOps	AWS, Bash scripting, Kubernetes
Machine Learning	Pytorch, Tensorflow, LLM
Version Control	Git, Perforce
Operating System	MacOS, Ubuntu, Windows
Languages	English, Hindi

Achievements

- 2018 **Recipient of the GSC Travel Award (\$500)** UIC
- 2018 **Recipient of the Peter and Deborah Wexler Graduate Scholarship (\$5000)** UIC
- 2012-2016 **Recipient of Merit Cum Need Scholarship (25% Fee Waiver)** BITS Pilani
- 2012 **Ranked 6364/400k+, 5962/1.2m+, 13/135k+ in national entrance exams IIT-JEE, AIEEE, BITSAT** India

Invited Talks

- 2023 **Keyphrase Generation: Redefining Data Science with NLP Applications | CS 418: Intro to Data Science**
UIC
- 2022 **DPI Research Scholars Workshop: Graduate School Prep and Planning** UIC

Services

- Reviewer: ACL 2023, EMNLP 2023, NAACL 2024**
- Volunteer: ACL 2023, EMNLP 2022**
- 2023 **Program Committee Member, EMNLP Industry Track**
- 2023-2024 **Executive Committee Member, Senate** UIC
- 2023-2024 **Member, Committee on Budget, Planning, and Priorities** UIC
- 2022-2023 **Representative of CS Dept in Graduate Student Council** UIC