AKHILA YERUKOLA

Natural Language Processing · Machine Learning
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RESEARCH INTERESTS

My research interests are in natural language processing (NLP), specifically in low-resource settings, explainability of natural language generation (NLG) systems and commonsense reasoning.

EDUCATION

Stanford University 2017 - 2019
Master of Science in Computer Science
Specialization: Artificial Intelligence, Information Management Analytics

National Institute of Technology Trichy (NITT), Tamil Nadu, India 2012 - 2016
Bachelor of Technology in Computer Science & Engineering

PUBLICATIONS

- Sebastian Gehrmann, ... **Akhila Yerukola**, Jiawei Zhou. The GEM Benchmark: Natural Language Generation, its Evaluation and Metrics *Association for Computational Linguistics (ACL) Workshop*, 2021
- **Akhila Yerukola***, Mason Bretan*, Hongxia Jin. Data Augmentation for Voice-Assistant NLU using BERT-based Interchangeable Rephrase *European Chapter of the Association for Computational Linguistics (EACL)*, 2021
- Abigail See, Aneesh Pappu*, Rohun Saxena*, **Akhila Yerukola***, Christopher D. Manning. Do Massively Pretrained Language Models Make Better Storytellers? *Computational Natural Language Learning (CoNLL)*, 2019.

(*** equal contribution**)

RESEARCH EXPERIENCE

Research Collaborator March 2021 - Present
University of Washington, Paul G. Allen School of Computer Science & Engineering
Advisor: Prof. Yejin Choi
— Devising a question answering metric based on commonsense to evaluate story generation models

Graduate Research Assistant Sept 2018 - July 2019
Stanford University, Department of Computer Science
Advisor: Prof. Christopher Manning
— Studied if and where RNN language models encode long-term planning information
— Showed that massive pretrained language models generate more coherent and diverse narrative discourse, however their repetition and genericness problems are caused mainly by choice of decoding algorithm [**CoNLL 2019**]

INDUSTRY EXPERIENCE

AI Research Engineer Aug 2019 - Present
Samsung Research America (SRA), Mountain View, CA, USA
Supervisors: Hongxia Jin, Vijay Srinivasan
— Working on fine-grained natural language understanding for Bixby (expected to roll out in Q1 2022)
— Developed an internal AI Chatbot to handle HR, IT & Legal user queries [**SRA Q3 2021 President's Award**]
— Delivered a low-resource domain classification system for Bixby with a 50% error rate reduction, relative to the previous production version, across Samsung's mobile phones and smart home products [**SRA Q4 2020 President's Award**]
— Devised a data augmentation strategy based on byte pair encoding and a BERT-like self attention model to rephrase user utterances [**EACL 2021**]

Sr. Machine Learning Intern June 2018 - Sept 2018
IBM Watson, San Jose, CA, USA
Supervisor: Rama Akkiraju
— Improved Watson's english named entity recognition (NER) model using semi-supervised learning

Software Engineer June 2016 - Aug 2017
Microsoft R&D, Hyderabad, India
— Built a sentiment analysis model for the Microsoft Social Engagement that improves sales by leveraging social insights
— Developed an orchestration engine library for dense Azure cloud deployments

TEACHING EXPERIENCE

Natural Language Understanding CS224U Spring 2019
Graduate Teaching Assistant **Instructors:** Prof. Christopher Potts, Prof. Bill MacCartney
— Worked with a team of 10 TAs for 250+ students to refine and grade course assignments. Mentored 10+ student teams for the course project delivery
— Taught a lecture on "Probing black box models"

Machine Learning CS229 Spring 2019
Graduate Teaching Assistant **Instructor:** Adjunct Prof. Andrew Ng
— Worked with a team of 30+ TAs for 850+ students to develop new assignments, refine and grade course assignments. Mentored 30 student teams for the course project delivery

Delta, a web development club of NITT June 2013 - May 2014
Undergraduate Volunteer Instructor
— Taught basics of C++, Java and Android application development

PROFESSIONAL EXPERIENCE AND VOLUNTEERING

Organizer: Generation, Evaluation, Metrics (GEM) Benchmark and Workshop at ACL 2021
Reviewer: EMNLP 2020
Secondary Reviewer: NAACL-HLT 2021, COLING 2020, CIKM 2020
Volunteer: EMNLP 2020, EMNLP 2021

DEPARTMENTAL SERVICE

- Member of the Stanford MSCS Admissions Committee, 2019. Reviewed student applications with faculty to select the incoming MS students for 2020.
- Editor of Bits and Bytes, the official newsletter of the Department of Computer Science, NITT, 2016. Managed a team of 10 people to release a newsletter twice a month.
- Head of Public Relations at Vortex, Annual Symposium of Department of Computer Science, NITT, 2016.

AWARDS

- SRA President's Award for excellence in research and innovation; awarded for Q4 2020 & Q3 2021
- 2nd Best Project Award, CS231n (Convolutional Neural Networks for Visual Recognition) Stanford 2018. Picked out of 200+ projects.
- 2nd Best Project Award, CS224n (NLP with Deep Learning) Stanford 2018. Picked out of 145+ projects.
- Full undergraduate scholarship by Ministry of Human Resource Development (MHRD), India 2012-2016. The scholarship is awarded to the top 0.01 % of students in the All India Engineering Exam, 2012.
- Third Highest GPA Award, 2015. Awarded by the Department of Computer Science, NITT.

SKILLS

Software	Python, C++, C#, JavaScript, NodeJS (proficient) Java, MATLAB, Android SDK, HTML/CSS (intermediate)
Computational libraries	Pytorch, Tensorflow, HuggingFace, numpy/scipy, pandas, spaCy
Languages	English, Telugu, Hindi (native) Kannada, Tamil (basic)
Extra-curricular	Android apps on Google Play: - Pragyan (NITT technical college event) - Festember (NITT cultural college event) Publicity team organizer, NITT cultural college event (Festember) 2013-2016 First place, volleyball at the annual inter collegiate sports meet, India 2013 Taekwondo red belt certified 2010