

AVINASH MADASU

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EDUCATION

Master of Science, Computer Science August 2021 - May 2023
University of North Carolina at Chapel Hill

Bachelor of Technology, Computer Science July 2014 - May 2018
National Institute of Technology Tiruchirappalli

PRESS

- [Analytics India Magazine](#)
- [Outlook India](#)

AWARDS

- Best Student Paper Award - ECIR 2023.
- National Award for Outstanding Researcher 2022-23 (1/4500) by International Institute of Organized Research.
- ACM grant to attend ACM Multimedia 2022 conference.
- Samsung Citizen Award 2019, 2020 (Research) (4/9000).

RESEARCH INTERESTS

Vision and language learning, Multimodal systems, Embodied navigation.

PUBLICATIONS

1. [A Unified Framework for Slot based Response Generation in a Multimodal Dialogue System](#)
Mauajama Firdaus*, **Avinash Madasu***, Asif Eqbal
Journal of Multimedia Tools and Applications
2. [Is Multi-Modal Vision Supervision Beneficial to Language?](#)
Avinash Madasu, Vasudev Lal
CVPR (NFVLR workshop) 2023
3. [A Unified Framework for Emotion Identification and Generation in Dialogues](#)
Avinash Madasu*, Mauajama Firdaus*, Asif Eqbal
EACL (SRW workshop) 2023
4. [Improving video retrieval using multilingual knowledge transfer](#)
Avinash Madasu, Estelle Guez Afalo, Gabriela Ben Melech Stan, Shao-Yen Tseng, Gedas Bertasius, Vasudev Lal
ECIR 2023
5. [What do Large Language Models Learn beyond Language?](#)
Avinash Madasu, Shashank Srivastava
EMNLP (Findings) 2022

6. [Learning to Retrieve Videos by Asking Questions](#)
Avinash Madasu, Junier Oliva, Gedas Bertasius
ACM Multimedia 2022
7. [Sequential Domain Adaptation through Elastic Weight Consolidation for Sentiment Analysis](#)
Avinash Madasu, Vijjini Anvesh Rao
ICPR 2020
8. [A Position Aware Decay Weighted Network for Aspect based Sentiment Analysis](#)
Avinash Madasu, Vijjini Anvesh Rao
NLDB 2020
9. [Sequential Learning of Convolutional Features for Effective Text Classification](#)
Avinash Madasu, Vijjini Anvesh Rao
EMNLP 2019
10. [Efficient Feature Selection techniques for Sentiment Analysis](#)
Avinash Madasu, Sivasankar E
Journal of Multimedia Tools and Applications
11. [Gated Convolutional Neural Networks for Domain Adaptation](#)
Avinash Madasu, Vijjini Anvesh Rao
NLDB 2019
12. [Effectiveness of Self Normalizing Neural Networks for Text Classification](#)
Avinash Madasu, Vijjini Anvesh Rao
CICLing 2019
13. [A Study of Feature Extraction techniques for Sentiment Analysis](#)
Avinash Madasu, Sivasankar E
IEMIS 2018

MANUSCRIPTS SUBMITTED (UNDER REVIEW)

1. Affective Visual Dialog : A Large-Scale Benchmark for Developing Emotion-Aware Vision Learners
 Kilichbek Haydarov, Xiaoqian Shen, **Avinash Madasu**, Mahmoud Salem, Li-jia Li, Gamaleldin Fathy Elsayed, Mohamed Elhoseiny
ICCV 2023
2. Multimodal Dialogue Modeling: Simultaneous Intent Recognition and Response Generation
Avinash Madasu*, Mauajama Firdaus*, Asif Ekbal
Knowledge Based Systems

EXPERIENCE

Intel Labs

Research intern

May 2022 - Present

- Exploring the fusion techniques used in multi-modal transformer architectures.

UNC Chapel Hill

Graduate Research Assistant

August 2021 - Present

Advisor: [Prof. Gedas Bertasius](#)

- Proposed a new interactive video retrieval system that leverages dialog with the users.

- The proposed approach requires minimum rounds of dialog to outperform the human dialog. The paper was published in ACM Multimedia 2022.

UNC Chapel Hill

Graduate Research Assistant

August 2021 - November 2021

Advisor: [Prof. Shashank Srivastava](#)

- Worked on the problem statement “grounded natural language instructions to automate web navigation”.
- Explored the inductive biases in pre-trained language models for solving non-linguistic tasks.

Samsung R&D Institute India - Bangalore

Senior Software Engineer on Bixby NLU

June 2018 - July 2021

- Successfully developed and deployed named entity recognition models to identify user sensitive information like phone number, name, bank details etc. These details will be anonymized to the developers of Bixby.
- Successfully built a model which identifies utterance executed in a wrong application. This model is built with triplet loss and with a very less data of 150 samples for each application.
- Successfully built a neural network model which identifies queries that are not well formed in Samsung TV. These identified queries are corrected which enhances the performance of search engine and user experience.
- Worked on federated learning approaches to bring Bixby user analytics to on-device. Explored federated learning to suggest user specific analysis on the device while preserving user privacy.

IIT Patna

Research Assistant

July 2020 - January 2021

Advisor: [Prof. Asif Eqbal](#)

- Worked with Prof Dr.Asif Eqbal on multi-modal dialogue systems involving text and image.
- Proposed an End-to-End model capable of identifying slots from user utterances without external slot labels. A paper is under review in the journal Multimedia Tools and Applications regarding this work.
- Proposed a multi-task framework capable of identifying intents and simultaneously generating responses. Intent and generation sub-networks were trained jointly.

National Institute of Technology, Tiruchirappalli

Research Assistant

July 2017 - May 2018

Advisor: [Prof. Sivasankar](#)

- Worked with Prof Dr.Sivasankar on low resource sentiment analysis and hybrid recommender systems.
- Designed efficient lexicon based feature selection techniques that achieved excellent performance in resource scarce conditions.
- Explored the possibility of combining text reviews with numerical ratings to design a hybrid recommender system.

Intel Corporation

Machine Learning Student Ambassador

July 2017 - May 2018

- Selected as a student ambassador of machine learning for the college in the final under graduate year.
- Nervana cloud resources were offered by the company Intel for carrying out machine learning research

Samsung R&D Institute India - Bangalore

Internship

May 2017 - July 2017

- Developed a crucial module for testing communication among smart home devices.
- Module helped in finding crucial communication failures among smart home devices.

VOLUNTEER EXPERIENCE

Conference Reviewer: CoLLA 2023, ACL 2023, CVPR 2023, EACL 2023, ACL 2022, ACL 2021, ICON 2020

Journal Reviewer: TMLR, Computer Speech & Language, ACL Rolling Review

Workshop Reviewer: ICLR - MoFo 2023, ICLR - MRL 2023, SocialNLP

PROGRAMMING SKILLS

Languages: Python, C++, C, Java Javascript, NodeJS.

Frameworks: PyTorch, Tensorflow, MxNet, Gluon, Keras

OPEN SOURCE DEEP LEARNING FRAMEWORKS CONTRIBUTIONS

- [gluonnlp](#) (Contributor and Member of Distributed Machine Learning Community- dmlc).
- [serve](#)
- [pytorch-optimizer](#).
- [catalyst](#)
- [AllenNLP](#)

RELEVANT LINKS

- Google Scholar: <https://scholar.google.com/citations?user=YRe0ruYAAAAJ&hl=en>
- DBLP: <https://dblp.org/pid/241/5153.html>
- Semantic Scholar: <https://www.semanticscholar.org/author/Avinash-Madasu/115098946>
- ORCID iD: <https://orcid.org/0000-0002-3802-7618>