

AMOGH MANNEKOTE

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SUMMARY

I'm a Ph.D. student with a strong **software engineering** background, currently investigating **machine learning** and **natural language processing** based approaches for building **dialogue systems** for **underserved applications** (such as **negotiation**, **collaboration**, and **tutoring**). Additionally, I am interested in exploring **HCI issues** surrounding the development and maintenance of such systems.

EDUCATION

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|---|-------------------|
| University of Florida | Gainesville, FL |
| PhD in Computer Science (Dialogue Systems & HCI) | 01/2021 - Present |
| Ramaiah Institute of Technology | Bengaluru, India |
| B.E. in Computer Science & Engineering | 08/2014 - 08/2018 |

PUBLICATIONS

1. [\[In Progress\]](#) **Amogh Mannekote**, B. Dorr, K.E. Boyer. "Generative Agreement Tracking for Multi-Issue Negotiation Dialogues"
2. [YRSSDS at SIGDIAL '22](#) **Amogh Mannekote**. "Collaborative Dialogue, A Position Paper"
3. [ACM SIGCSE '22](#) **Amogh Mannekote**, M. Celepkolu, A. Galdo, K.E. Boyer, M. Israel, S. Heckman, K. Stephens-Martinez. "Don't Just Paste Your Stacktrace: Shaping Discussion Forums in Introductory CS Courses"

WORK EXPERIENCE

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| University of Florida | Gainesville, FL |
| <i>Graduate Research Assistant</i> | 01/2021 - Present |

- Developed a novel text clustering model to help instructors of undergraduate CS courses analyze student questions on discussion forums (e.g., Piazza) by fine-tuning S-BERT over a dataset of StackOverflow questions. The resulting model outperformed vanilla S-BERT along with various other competitive semantic similarity methods.
- Designed and implemented a conversational learning partner that would reside within [EarSketch](#). EarSketch is a web-based learning environment that helps high-school learners learn programming through music remixing.

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| Fractal Analytics & Crux Intelligence | Bengaluru, India |
| <i>Data Scientist</i> | 01/2020 - 11/2020 |

- Brought down the time-to-release of Crux's platform from one day to a few minutes by implementing an end-to-end evaluation framework for Text-to-SQL Semantic Parsing.

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| Rasa | Berlin, Germany |
| <i>Machine Learning Solutions Architect</i> | 07/2019 - 11/2019 |

- Developed Conversational AI solutions for enterprise clients across healthcare, automotive, insurance, and retail industries.
- Contributed to Rasa platform development by adding features and maintenance.

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|---|-------------------|
| Indian Institute of Science (RBCCPS) | Bengaluru, India |
| <i>Research Assistant</i> | 07/2018 - 06/2019 |

- Extensively studied and evaluated various state-of-the-art approaches to Visual SLAM with sensor fusion in challenging outdoor environments
- Improved the accuracy of an extrinsic calibration system that was based on Perspective-n-Point (PnP) by introducing a Grid Search step over the pixel-space of the images

IBM*Intern - Watson Machine Learning Team*

Bengaluru, India

04/2018 - 06/2018

- Worked on the serving infrastructure for TensorFlow, Keras, and PyTorch on Watson's ML platform

Stride.AI*Research Intern*

Bengaluru, India

02/2017 - 02/2018

- Designed a multi-turn conversational information-retrieval agent for a Fortune 500 organization to automate searching through their database for employees matching relevant skills
- Evaluated various approaches such as topic extraction, semantic similarity, text similarity, Doc2Vec, and Siamese networks.

Indian Institute of Science (Dept. of CSA)*Intern at the Game Theory Lab*

Bengaluru, India

06/2017 - 08/2017

- Simulated prediction markets using sentiment analysis of news sources

SELECT PROJECTS

MultiWOZ-Gaze Although eye-gaze has been used extensively in NLP, it is underexplored in the context of dialogue corpora. Through this proof-of-concept, we demonstrated the feasibility of using an inexpensive eye-tracker to derive key insights about the MultiWOZ task-oriented dialogue corpus.

Nonechucks An open-source library that provides wrappers around PyTorch DataLoaders to seamlessly handle invalid or unwanted data samples in ML data pipelines (featured on GitHub's Trending Python Repositories).

Rasa-FRAMES A proof-of-concept fork of Rasa Core that supports handling of more than one dialogue "frame" (inspired by the Microsoft FRAMES dataset)

Undergraduate Capstone Improved out-of-distribution generalization of a fully connected neural network by using fine-grained human annotations and a training cost function that penalizes high input gradients in irrelevant regions of the input space.

SKILLS

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| Programming | Python, Java, Javascript, TypeScript, C/C++, Erlang, SQL, L ^A T _E X |
| Machine Learning | PyTorch, TensorFlow, Keras, NumPy, Pandas, scikit-learn, Matplotlib, WandB |
| NLP | HuggingFace Transformers, spaCy, NLTK, Amazon Lex, Rasa |
| Infrastructure | AWS, GCP, SLURM, Kubernetes, Docker, Git, Bash |
| Web Technologies | ReactJS, HTML, Angular, MVC, jQuery, CSS |

TALKS & PODCASTS

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| Guest Speaker on the CS-Ed Podcast | On the use of discussion forums in CS1/2 classrooms [Link] |
| Building a Chatbot with Rasa | Delivered at Ramaiah Institute of Technology [Link] |

ACADEMIC AWARDS & FELLOWSHIPS

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| Graduate Fellowship, 2022 | Awarded by the Dept. of CISE at University of Florida |
| Student Travel Grant, 2019 | For attending CoDS-COMAD 2019 |

NATURAL LANGUAGES

English (native) · Kannada (native) · Hindi (working)