# Varun Iyer

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## Education

**University of Illinois Chicago**
*Doctor of Philosophy in Computer Science* — *Aug. 2022 – Present*

**Johns Hopkins University**
*Master of Science in Engineering – Computer Science* — *Aug. 2020 – May 2022*

**University of Massachusetts Amherst**
*Bachelor of Science in Computer Science* — *Aug. 2017 – May 2020*

## Experience

**Research Assistant**
*University of Illinois Chicago* — *Aug. 2022 – Present*

- Working with Professor Cornelia Caragea on zero-shot abstractive document summarization
- Improved zero-shot performance on summarization tasks on the CNN/DailyMail and Multi-News datasets

**Teaching Assistant**
*University of Illinois Chicago* — *Jan. 2023 – Present*

- Led lab sections for discrete mathematics and C programming courses
- Helped students better understand concepts in discrete mathematics, functional/systems programming, and NLP
- Graded hundreds of exams assessing programming ability in C, Python, SQL, F#, and Go

**Applied Scientist Intern**
*Amazon* — *May 2021 – Dec. 2021*

- Worked with Dr. Anoop Kumar on unsupervised paraphrase-based data augmentation
- Leveraged Abstract Meaning Representations (AMRs) to generate syntactically diverse paraphrases
- Achieved state-of-the-art performance on unsupervised paraphrase generation tasks on several datasets

**Research Assistant**
*Johns Hopkins University* — *May 2020 – Dec. 2021*

- Worked with Professor Benjamin van Durme on semantically grounded image classification
- Augmented a ResNet architecture with geometric hierarchical embeddings for few-shot learning
- Extended a neural entity typing pipeline to new datasets in a distributed training setting

**Undergraduate Researcher**
*University of Massachusetts Amherst* — *Aug. 2018 – May 2020*

- Worked with Professor Andrew McCallum on fine-grained entity typing using PyTorch
- Developed a stacked BiLSTM with embedding-based loss functions and hierarchical type constraints

**Undergraduate Research Intern**
*Information Sciences Institute* — *May 2018 – Aug. 2018*

- Worked with Professor Craig Knoblock to build and link entities in a knowledge graph of space-related objects
- Implemented level-based access control for data across multiple Elasticsearch indices
- Extracted information on thousands of satellites and incorporated data into an Elastic workflow

## Awards

**Area Chair Award**
*Association for Computational Linguistics* — *July 2023*

- Awarded for second-author paper *ParaAMR* in semantics

## Publications

1. **Varun Iyer** and Cornelia Caragea. *BLooP: Zero-Shot Abstractive Summarization using Large Language Models with Bigram Lookahead Promotion*. To appear in *Proceedings of the Fifteenth Biennial Language Resources and Evaluation Conference (LREC)*, 2026.
2. Kuan-Hao Huang, **Varun Iyer**, I-Hung Hsu, Anoop Kumar, Kai-Wei Chang, and Aram Galstyan. *ParaAMR: A Large-Scale Syntactically Diverse Paraphrase Dataset by AMR Back-Translation*. In *Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics (ACL)*, 2023.
3. Kuan-Hao Huang, **Varun Iyer**, Anoop Kumar, Sriram Venkatapathy, Kai-Wei Chang, and Aram Galstyan. *Unsupervised syntactically controlled paraphrase generation with abstract meaning representations*. In *Findings of the Association for Computational Linguistics: EMNLP*, 2022.

## Technical Skills

**Languages**: Python, Rust, C/C++, SQL
**Frameworks**: PyTorch, Transformers, vLLM, Kubernetes
**Developer Tools**: Git, Docker, GitLab CI/CD, tmux, VS Code, PyCharm, Helix
**Libraries**: Pandas, NumPy, Matplotlib, PyO3