Varun Iyer

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Education

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

Johns Hopkins University Aug 2020 – May 2022
Master of Science in Engineering - Computer Science

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

Experience

Research Assistant Aug 2022 – Present
University of Illinois Chicago *Chicago, IL*

- Working with **Professor Cornelia Caragea** on zero-shot abstractive document summarization
- Improved zero-shot performance on summarization task on CNN/DM and Multi-News datasets

Teaching Assistant Jan 2023 – Present
University of Illinois Chicago *Chicago, IL*

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

Applied Scientist Intern May 2021 – Dec 2021
Amazon *Remote*

- Worked with **Dr. Anoop Kumar** on unsupervised paraphrase-based data augmentation
- Leveraged Abstract Meaning Representations (AMRs) to generate syntactically diverse paraphrases
- Achieved SOTA performance on unsupervised paraphrase generation task on several datasets

Research Assistant May 2020 – Dec 2021
Johns Hopkins University *Remote*

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

Undergraduate Researcher Aug 2018 – May 2020
University of Massachusetts Amherst *Amherst, MA*

- 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 Course Assistant Aug 2018 – May 2020
University of Massachusetts Amherst *Amherst, MA*

- Graded homework submissions in Artificial Intelligence and Algorithms
- Helped students complete programming assignments written in Python and C

Undergraduate Research Intern May 2018 – Aug 2018
Information Sciences Institute *Marina del Rey, CA*

- Worked with **Professor Craig Knoblock** to build and link entities in a KG 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 Elastic workflow

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

Awards

Area Chair Award July 2023

Association for Computational Linguistics

- Awarded for second-author paper (ParaAMR) in semantics

Projects

BLooP Aug 2024 – Present

Zero-Shot Abstractive Summarization

- Developed a training-free summarization approach using a logits processor with bigram lookahead promotion
- Improved factuality and coherence in zero-shot abstractive summarization with large language models
- Evaluated on CNN/DailyMail and Multi-News benchmarks

NRP K8s Template Apr 2025 – Present

Kubernetes Setup Template

- Created a reusable template to bootstrap Kubernetes cluster setup and configuration
- Provided example manifests and automation for reproducible environment bring-up
- Actively maintained to streamline development and deployment workflows

Publications

* denotes equal contribution

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 (EMNLP Findings)*, 2022.