SRINIVAS RAVISHANKAR ⋄ (412)-509-7034 ⋄ srini.shank@gmail.com

EDUCATION

Carnegie Mellon University, Pittsburgh *August 2018 - Dec 2019*
Master of Science in Machine Learning GPA: 4.03/4.33
RV College of Engineering, Bangalore *August 2014 - May 2018*
Bachelor of Engineering in Computer Science. GPA: 9.65/10.0

EXPERIENCE

IBM Research, New York Feb 2020 - Present
Research Software Engineer II

· **Neuro-Symbolic Question Answering (NSQA):** First author of multiple state-of-the-art approaches in NLP for QA and relation linking that have appeared in conferences such as ACL, AAAI and ISWC.
· **DARPA** : Solely responsible for the schema instantiation module of IBM's submission to DARPA's KAIROS (Knowledge directed Artifical Intelligence Reasoning Over Schemas) project. Obtained the best F1 metric among all performers (CMU, IBM, RESIN, JHU) in the latest evaluation by DARPA in Dec 2020.

Carnegie Mellon University, Pittsburgh Jan - Dec, 2019
Research Assistant - Neural Dynamics of Natural Language Comprehension

· Developed a framework to denoise single-trial MEG data during a language comprehension task, by integrating data from multiple subjects. Leveraged Shared Response Models (SRMs) for cross-subject prediction.
· Demonstrable increase in encoding and decoding performance in denoised data compared to original data.
· Allows better discovery of neural phenomena, and showed proof-of-concept with significantly clearer N400m correlation with word surprisal. Accepted to Frontiers in Computational Neuroscience.

Goldman Sachs, Bangalore Jan - Apr, 2018
Tech Intern - Human Capital Management Division

· Implemented a full-stack application for automated employment verification, offer letter generation etc. being used by 23k+ employees in the firm, and by 30+ admins in the Human Capital Management division.

Indian Institute of Science, Bangalore May - July, 2017
Research Intern - Machine and Language Learning Lab

· Identified a major limitation of existing benchmark datasets in Knowledge Graph Embedding (KGE) literature, showed that then-SOTA algorithms were exploiting these limitations and could not generalize well.
· Proposed new KGE model, first author of paper published at the AKBC workshop, NeurIPS 2017.

AWARDS & HONORS

IBM Outstanding Technical Achievement (2021), IBM Patent File award (2021) : For distinguished contributions to IBM's Neuro-Symbolic QA system; and being the primary inventor of its central patent.

Infineon Scholarship (2018) : Graduated among students with top 3 CGPA in undergraduate cohort.

PATENTS

- **Ravishankar S**, Thai J, Abdelaziz I, Kapanipathi P, Naseem T, Mihindukulasooriya N, Fokoue A (2021). A two-stage approach to generalization and transfer in Knowedlge Base Question Answering. **Filed**

- **Ravishankar S**, Abdelaziz I, Kapanipathi P, Roukos S, Gray A. (2020). System and Method for Semantic path-based Question Answering over Knowledge Graphs. P202007378

PUBLICATIONS & PREPRINTS

- **Ravishankar S**, Toneva M, Wehbe L. (2021). Single-trial MEG data can be denoised through cross-subject predictive modeling. Frontiers in Computational Neuroscience

- **Ravishankar S** et al. (2021). A Two-Stage Approach towards Generalization in Knowledge Base Question Answering. **Preprint**

- Naseem T, **Ravishankar S**, Mihindukulasooriya N, Abdelaziz I, Lee Y.S, Kapanipathi P, Roukos S, Gliozzo A, Gray A (2021). A semantics-aware transformer model of relation linking for knowledge base question answering. ACL 2021.

- **Ravishankar S*** et al. (2021) Leveraging abstract meaning representation for knowledge base question answering. ACL Findings 2021. (*Equal contribution among first 3 authors)

- **Ravishankar S**, Abdelaziz I, Kapanipathi P, Roukos S, Gray A. (2021). A Semantic Parsing and Reasoning-Based Approach to Knowledge Base Question Answering. AAAI Demonstrations 2021

- Mihindukulasooriya N, Rossiello G, Kapanipathi P, Abdelaziz I, **Ravishankar S**, Yu M, Gliozzo A, Roukos S, Gray A. (2020). Leveraging Semantic Parsing for Relation Linking over Knowledge Bases. ISWC 2020

- **Ravishankar S**, Chandrahas, Talukdar P. (2017). Revisiting Simple Neural Networks for Learning Representations of Knowledge Graphs. AKBC 2017

OUTREACH

AI4ALL is a US-based nonprofit dedicated to increasing diversity and inclusion in AI education, research, development, and policy; with ties to various graduate schools across US.

- **2019, AI4ALL Mentor** : Designed teaching material (lectures, coding exercises, project), and taught a group of 7 high-school students underrepresented in STEM for an 8-week period during summer.

- **2021, AI4ALL Project material** : Designed the above teaching material used by all 6 groups of 4-5 students each in CMU's 2021 AI4ALL cohort.

SKILLS

Languages : Python, C++, Java, JS

Tools/Libraries : FSL, FieldTrip, PyTorch, TensorFlow, Sklearn