Amar Viswanathan

Research Scientist, Siemens CT

✉ amarviswanathan@gmail.com
🖥 amarviswanathan.github.io
in amarviswanathan
amarviswanathan

■ Research

Objective To build AI systems that utilize contextual knowledge (knowledge graphs) along with deep learning based systems for applications in question answering, querying, information representation, extraction and retrieval

Interests Information Representation, Information extraction, Language and Vision, Knowledge graphs, Querying large scale graphs, Question answering

■ Education

2011-2018 **PhD in Computer Science**, *Rensselaer Polytechnic Institute*, Troy, NY,
Thesis: Schema-and Data-aware query reformulation in knowledge graphs.
Advisor: James A.Hendler

2015–2017 **Masters in Computer Science**, *Rensselaer Polytechnic Institute*, Troy, NY,
Project: Query reformulation in large scale knowledge graphs.
Advisor: James A.Hendler

2003–2007 **Bachelor of Engineering**, *Anna University*, Chennai, India,
Major: Computer Science and Engineering.

■ Industry and Academic Experience

2019–present **Acting Senior Key Expert**, Siemens CT, Princeton, NJ.
Working on attention models for efficient transformation of scene graphs to knowledge graphs.

2018–present **Research Scientist**, Siemens CT, Princeton, NJ.
Secured and successfully executed two phases of the **$1M DARPA AIE** project as a Co-PI and key contributor
Key Projects:
○ Deep Code Curator (DCC):
  - Built a Bi-LSTM and Multi task learning based Scientific Extraction system.
  - Built a multi-modal scientific knowledge graph that represents deep learning publications and code.

2007–2011 **Senior Software Engineer**, Infosys Technologies Limited, Bengaluru.
Developed novel sentiment analysis systems that resulted in papers at WWW'09 and patents.

Summer 2015 **Summer Research Intern**, IBM TJ Watson Research Center, Yorktown Heights,
Mentor: Geeth De Mel.
Built a query reformulation system for knowledge graphs as part of the NS-CTA ARL program

Summer 2015 **Summer Research Intern**, IBM TJ Watson Research Center, Yorktown Heights,
Mentor: Kaoutar El Maghraoui .
Built a NLP based summarization system for system query log outputs.

■ Professional Service

Reviewer CogSci 2016, CogSci 2017, CogSci 2018, CogSci 2019, CogSci 2020, AAAI 2019, AAAI 2020

Organizer WebSci 2017

PC Member Semantic Web for Social Good (SWSG 2018), SWSG 2019

■ Awards

DARPA Co-PI for the **$1M** project **Deep Code Curator : A system to represent scientific papers as knowledge graphs**. This was part of the DARPA ASKE program in 2018. (Siemens share is $760,000

US2TS 2018	NSF Award for Student presenters at the U.S. Semantic Technologies Symposium 2018
AAAI 2016	SIGAI Doctoral Consortium Award
Finalist	3MT Three Minute Thesis at RPI's Graduate research symposium 2016

Select Talks and Posters

2019   Amar Viswanathan. Deep Code Curation - A project to build multi modal knowledge graphs from deep learning papers, **The Scientific Literature Knowledge Bases workshop at AKBC 2019**

2016   Amar Viswanathan. Pragmatics Aware Querying in Heterogeneous Knowledge Graphs, **Thirtieth AAAI Conference on Artifical Intelligence, Doctoral Consortium**, Phoenix, AZ (USA) 02/12/2016.

2016   Amar Viswanathan, Geeth de Mel, James A .Hendler. Pragmatics and Discourse in Knowledge Graphs, **Workshop on Symbiotic Cognitive Systems, Thirtieth AAAI Conference on Artificial Intelligence,** Phoenix, AZ(USA) 02/12/2016.

2015   Amar Viswanathan, Geeth de Mel, James A. Hendler. Pragmatic Query Reformulation and Answer Generation in Knowledge Graphs, **IBM Cognitive Computing Symposium,** RPI, Troy, NY 11/09/2015. (Poster Session)

2015   Amar Viswanathan. Pragmatic Query Reformulation in Heterogeneous Knowledge Graphs, **Intern Talk and Poster Session,** IBM, Yorktown Heights, NY, 08/22/2015.

2014   Amar Viswanathan. "Not Elementary, My dear Watson.."- Extending Watson for Question Answering on Linked Open Data, **IBM Cognitive Computing Symposium,** IBM, Yorktown Heights, NY 10/30/2014. (Poster Session)

2014   Amar Viswanathan. Semi Supervised Pattern Summarization of Client Resolution Data, **IBM Summer Intern Poster Event** IBM, Yorktown Heights, NY, 08/22/2014. (Poster Session), Public talk on 08/06/2014

2013   John Erickson, Amar Viswanathan, Josh Shinavier, Yongmei Shi, James A. Hendler. Text Analysis of International Open Government Data, **NY State Health Data Codeathon**, RPI, Troy, NY, 12/20/2013.

Publications

[1] Rajesh Balakrishnan, Bintu G Vasudevan, Amar Viswanathan, Prasanna Venkatesh Raghunathan, and Umadas Ravindran. Methods for analyzing user opinions and devices thereof, July 19 2013. **US Patent App. 13/946,832**.

[2] John S Erickson, Amar Viswanathan, Joshua Shinavier, Yongmei Shi, and James A Hendler. Open Government Data: A Data Analytics Approach. *IEEE Intelligent Systems*, pages 19–23, 2013.

[3] Toufeeq Hussain, Rajesh Balakrishnan, and Amar Viswanathan. Semantic wiki aided business process specification. In *Proceedings of the 18th international conference on World Wide Web*, pages 1135–1136. ACM, 2009.

[4] Sabbir Rashid, Amar Viswanathan, Ian Gross, Elisa Kendall, and Deborah McGuinness. Leveraging Semantics for Large-Scale Knowledge Evaluation. In *WebSci-17 Workshop on Industrial Knowledge Graphs*. **WebScience-17**, 2017.

[5] Amar Viswanathan. Pragmatic reformulation in knowledge graphs. In *AAAI-16 Doctoral Consortium*. **AAAI**, 2016.

[6] Amar Viswanathan, Geeth De Mel, and James Hendler. Pragmatics and Discourse Knowledge Graphs. In *AAAI-16 Workshop on Symbiotic Cognitive Systems*. **AAAI**, 2016.

[7] Amar Viswanathan, James R Michaelis, Geeth R de Mel, and James Hendler. In context query

reformulation for failing sparql queries. In *Ground/Air Multisensor Interoperability, Integration, and Networking for Persistent ISR VIII*, 2017.

[8] Amar Viswanathan, Prasanna Venkatesh, Bintu G Vasudevan, Rajesh Balakrishnan, and Lokendra Shastri. Suggestion Mining from Customer Reviews. 2011.

Working Papers

2020   Amar Viswanathan, "A context oriented multi task framework for constructing scientific knowledge bases",*In preparation*

2020   Amar Viswanathan, Ioannis Akrotirianakis, Dmitriy Fradkin, Aditi Roy, "Deep Code Curation - A large scale scientific knowledge graph for deep learning papers", *In preparation*

2020   Amar Viswanathan,Tongtao Zhang, Spondon Kundu, "Knowledge graph guided attention for visual question answering", *In preparation*

Relevant Certifications

Udacity   Machine Learning Nanodegree

Udacity   Natural Language Processing Nanodegree

Coursera   Machine Learning Andrew Ng

Coursera   Deep Learning Specialization

Coursera   Text Analysis and Search Engines