Sashank Santhanam

Department of Computer Science
University of North Carolina at Charlotte
9201 University City Blvd, Charlotte, NC - 28223
ssantha1@uncc.edu • (267) 575-6385
Personal Webpage: https://sashank06.github.io/

Education

University of North Carolina – Charlotte Charlotte, NC
Ph.D. in Computer Science expected May 2021

- Research area: Dialogue Systems, Human Behavior Modeling
- Advisors: Dr. Samira Shaikh
- Committee: Dr. Wlodek Zadrozny, Dr. Minwoo Jake Lee, Dr. Nicholas Davis

University of North Carolina – Charlotte Charlotte, NC
MS in Computer Science Dec 2015

- Research area: Social Media Analysis
- Advisors: Dr. Shaoting Zhang

Anna University Tamil Nadu, India
BE in Computer Science and Engineering May 2014

- Research area: Bayesian Networks

Conference Publications

16) Bhatia A., Dalton A., Brodie M., **Santhanam S.**, Shaikh S., Zemel A., Strzalkowski T., Dorr BJ., "Adaptation of a Lexical Organization for Social Engineering Detection and Response Generation", Social Threats in Online Conversations, LREC, 2020

15) Dalton A., Aghaei E., Al-Shaer E., Bhatia A., Castillo E., Cheng Z., Dhaduvai S., Duan Q., Hebenstreit B. , Islam M., Karimi Y., Masoumzadeh A., Mather B., **Santhanam S.**, Shaikh S., Zemel A., Strzalkowski T., Dorr BJ., "Adaptation of a Lexical Organization for Social Engineering Detection and Response Generation", Social Threats in Online Conversations, LREC, 2020

14) **Santhanam S**., Shaikh S., "Modeling Conversation Context by Adapting Cognitive Architectures", in Bridging AI and Cognitive Science, ICLR, 2020

13) **Santhanam S.,** Shaikh S., "Studying the effects of Cognitive Biases in Evaluation of Conversational Agents", in ACM CHI 2020, Hawaii **[Honorable Mention]**

12) Dorr B., Bhatia A., Dalton A., Mather B., Hebenstreit B., **Santhanam S.**, Cheng Z., Shaikh S., Zemel A., Strzalkowski T., "Detecting Asks in Social Engineering Attacks: Impact of Linguistic and Structural Knowledge", in the 34th AAAI Conference on Artificial Intelligence, New York, USA

11) **Santhanam S.**, Lee M., Shaikh S., "Towards Understanding the Importance of Relationships between Speakers in Dialogue Generation", Under Review

10) **Santhanam S**., Shaikh S., "Modeling Conversation Context by Adapting Cognitive Architectures", in 1st Workshop on Discourse Structure in Neural NLG 2019, Tokyo, Japan [Non-Archival]

9) **Santhanam S**., Shaikh S., "Emotional Neural Language Generation Grounded in Situational Contexts", in 4th Workshop on Computer Creativity in Natural Language Generation 2019, Tokyo, Japan

8) **Santhanam S**., Shaikh, S., "Towards Best Experiment Design in Evaluating Dialogue System Output", in 12th International Natural Language Generation Conference 2019, Tokyo, Japan

7) Srinivasan V., **Santhanam S**., Shaikh S., "Natural Language Generation Using Reinforcement Learning with External Rewards", in 18th IEEE International Conference on Machine Learning and Applications - ICMLA 2019, Boca Raton, Florida

6) Wesslen, R., **Santhanam, S.**, Karduni, A., Cho, I., Shaikh, S., Dou, W., "Investigating Effects of Visual Anchors on Decision-Making about Misinformation", in 21st International IEEE Conference on Visualization (EuroVis) 2019, Porto, Portugal,

5) Karduni, A., Cho, I. Wesslen, R., **Santhanam, S.**, Volkova, S., Arendt, D., Shaikh, S., Dou, W., "Vulnerable to Misinformation? Verifi!", in 24th ACM Conference on Intelligent User Interfaces, Los Angeles, USA, Mar. 16-20 2019,

4) Karduni, A., Wesslen, R., **Santhanam, S.**, Cho, I., Volkova, S., Arendt, D., Shaikh, S., Dou, W., "Can You Verifi This? Studying Uncertainty and Decision-Making about Misinformation in Visual Analytics", in 12th International AAAI Conference on Web and Social Media, Stanford, USA, Jun. 25-28 2018, (***Acceptance Rate**: 16%*)

3) **Santhanam S**., Srinivasan, V., Glass, S., Shaikh, S., "I Stand With You: Using Emojis to Study Solidarity in Crisis Events", in Proceedings of 1st International Workshop on Emoji Understanding and Applications in Social Media (ICWSM), Stanford, USA, Jun. 25-28 2018, published by AAAI.

2) **Santhanam S**., Shaikh, S., "I Stand With You: Detecting and Characterizing Expressions of Solidarity in Social Media", in 4th International Conference on Computational Social Science (IC2S2), Chicago, USA, July. 12-15 2018.

1) Cho, I., Wesslen, R., Karduni, A., **Santhanam, S.**, Shaikh, S., Dou, W., "The Anchoring Effect in Decision-Making with Visual Analytics", in 12th International IEEE Conference Visual Analytics Science and Technology, Phoenix, Arizona, Oct. 1-6 2017, (***Acceptance Rate**: 22% - 25%*)

Journal Publications

2) **Santhanam. S**, Srinivasan. V, Mahajan. K, Shaikh. S, "Towards Understanding the Pragmatics of Emojis through Solidarity Expressed during Crisis Events",

1) **Santhanam. S**, Shaikh. S, "A Survey of Natural Language Generation Techniques with a Focus on Dialogue Systems - Past, Present and Future Directions", Arxiv 1906.00500

Poster Presentations

3) **Santhanam S**., Shaikh, S., "Salient Context Identification from Memory for Neural Dialog Systems", in 2nd Southern Data Science Conference, Atlanta, USA, Apr. 13-14 2019.

2) Dalton, A., Zemal, A., Masoumzadeh, A., Bhatia, A., Dorr, B., Mather, B., Hebenstreit, B., Al-Shaer, E., Khoja, E., Castillo, E.J., Bunch, L., Vlahovic, M., Liu, P., Pirolli, P., Shah, R., Cartacio, S., Shaikh, S., **Santhanam S**., Dhaduvai, S., Strzalkowski, T., Karimi, Y., "Modeling Social Engineering Risk using Attitudes, Actions, and Intentions Reflected in Language Use", in 32nd International FLAIRS Conference, Florida, USA, May. 19-22 2019. [Alphabetical Ordering]

1) **Santhanam S**., Shaikh, S., "Propaganda or Clickbait? Understanding and Classifying Types of Misinformation using Recurrent Neural Networks", in 1st Southern Data Science Conference, Atlanta, USA, Apr. 13-14 2018.

Press Coverage

1) **Santhanam S**., Shaikh, S., "Understanding the emoji of solidarity", in The Conversation, July 16, 2018

Research Experience

University of North Carolina – Charlotte Charlotte, NC
Ph.D. Candidate
Conversational Agents

- Developing conversational agents that adapt cognitive architectures as external memories (long term and short term).
- Understanding the importance of relationship between speakers in dialogue generation and modeling relationships across social networks.
- Generating personalized messages through conversational agents and engage countermeasures strategies for social engineering and phishing attacks. [DARPA Grant]

Collaborative Drawing

- Develop a collaborative drawing interface that allows users to interact with an agent and create a drawing.

Understanding Decision Making

- Evaluating the impact of anchoring and confirmation bias on decision making through visual interfaces for tasks on identifying and interpreting misinformation.
- Evaluating the impact of cognitive biases and experiment design towards conversational dialogue output evaluation.

Human Behavior Modeling

- Analysis of Twitter and Gab.com to understand how the online community comes together to express messages of solidarity through text and emojis
- Cross-platform analysis on Twitter and Gab.com for abusive language through various crisis events.

Professional Experience

Amazon Remote
Research Intern Sept 2020

- Mentors: Behnam Hedayatnia, Dilek Hakkani-Tur

Nvidia Remote
Research Intern May 2020

- Worked on incorporating external knowledge to conversational agents
- Mentors: Wei Ping, Mohammad Shoeybi, and Mostofa Patwary

Walmart, Global Shared Service Charlotte, NC
Data Analyst 2015 – 2016

- Developed software to help the associates at Walmart to process invoices and other receipts.
- Reduced workload of the associates by auto-matching invoices and the receipts.
- Developed workflows in alteryx and dashboards using Tableau to help in tracking of the backlogs.

Indian Institute of Technology,Madras Tamil Nadu, India
Intern 2015 – 2016

- Advisor: Dr. Saji K. Matthew
- Implemented a scoring algorithm in R to analyze the emotional variation on Twitter data during sporting events

Awards/Scholarships

Deep Mind, Facebook, Center for Brains, Minds and Machines at MIT [ICLR] Virtual, 2020

Visual Dialog - Best Project Award — Lowell, MA
Conversational International Summer School — 2019

Association for Advancement of Artificial Intelligence — Stanford, CA
Graduate Travel Support — 2017

University of North Carolina – Charlotte — Charlotte, NC
Graduate Assistant Support Plan(GASP) — 2017 – Present

Professional Activities

1) Service

- Reviewer of the **Emoji Conference 2019, 2020**
- Reviewer of **NAACL 2019.**
- Reviewer of **ACL 2019, 2020.**
- Reviewer of **ACM CHI Conference on Human Factors in Computing Systems, 2019.**
- Reviewer of **WiNLP 2019.**
- Reviewer of **AAAI 2019, 2020, 2021.**
- Reviewer of **ICML 2020.**
- Reviewer for **EMNLP 2019, 2020.**
- Reviewer for **EACL 2021.**

2) Invited Lectures/Talks

- **Natural Language Processing** - Neural Networks for Natural Language Generation
- **Natural Language Processing** - Machine Translation
- **Computation Human Behavior Modeling (ITCS 8050/6050, PSYC-6099)** – Survey of Natural Language Generation Techniques
- **Applied Machine Learning -** Introduction to Reinforcement Learning

Skills

Software: Python, Tensorflow, PyTorch, Java, Javascript, D3
Language: English, Tamil (native)

References

1) Dr. Samira Shaikh

Assistant Professor,
Department of Computer Science,
University of North Carolina at Charlotte,
9201 University City Blvd, Charlotte, NC- 28262,
Phone: (704) 687-7022,
Email: sshaikh2@uncc.edu

2) Dr. Minwoo Lee

Assistant Professor,
Department of Computer Science,
University of North Carolina at Charlotte,
9201 University City Blvd, Charlotte, NC- 28262,
Phone: (704) 687-8188,
Email: minwoo.Lee@uncc.edu

3) Dr. Wlodek Zadrozny

Professor,
Department of Computer Science,
University of North Carolina at Charlotte,
9201 University City Blvd, Charlotte, NC- 28262,
Phone: 704-687-8377,
Email: wzadrozn@uncc.edu