CURRICULUM VITAE

Peter Alexander Jansen, PhD
Assistant Professor, School of Information, University of Arizona.
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Chronology of Education

2010 **Ph.D., Psychology & Neuroscience, McMaster University, Canada**
Dissertation: A self-organizing computational neural network architecture with applications to sensorimotor grounded linguistic grammar acquisition.
Advisors: Scott Watter, Karin Humphreys, Lee Brooks, Alex Sevigny
Major Fields: Cognitive Modelling, Knowledge Representation

2005 **B.I.S., Cognitive Science Option, University of Waterloo, Canada**
Thesis: Developmental Knowledge Representation
Advisors: Chrysanne DiMarco, Paul Thagard
Major Fields: Computer Science, Cognitive Science, Physics

Chronology of Employment

2016 **Assistant Professor**, School of Information, University of Arizona
Courtesy Appointment in Department of Linguistics.
2015 **Research Professor**, Department of Linguistics, University of Arizona
2013 **Postdoctoral Research Associate**, School of Information, University of Arizona
2012 **Senior Artificial Intelligence Engineer**, Scanadu Inc, NASA Ames Research Campus
2010 **Postdoctoral Research Associate**, Electrical Engineering, University of Arizona

Honors and Awards

2014 **Hackaday Prize 2014**. 4th place of 800+ teams in global design competition.
2010 **Hebb Student Award (Runner up)** for best paper.

Service and Outreach

National/International Outreach

2017 Public Talk (Sensing/Tricorder Project), Penguicon, Detroit, MI.
2016 Public Talk (Sensing/Tricorder Project), North-east Trek Convention, Albany, NY.
2016 Public Talk (AI), Phoenix Science Center, Phoenix, AZ.

Departmental Committees

2019 Graduate Committee

2018 Graduate Committee

2017 Knowledge River Committee

2016 Graduate Committee

Other Committees (Internal or External)

2019 Textgraphs 2019 Workshop (at EMNLP) Organizing Committee

Publications/Creative Activity

Peer-Reviewed Conference and Workshop Papers

1. Khot, T., Clark, P., Guerquin, M., **Jansen, P.**, and Sabharwal, A. QASC: A Dataset for Question Answering via Sentence Composition*. AAAI 2020.*
2. Thiem, S., and **Jansen, P.** Extracting Common Inference Patterns from Semi-Structured Explanations. *Submitted to the Commonsense Inference in Natural Language Processing workshop (COIN 2019).*
3. **Jansen, P.** (2018). Multi-hop Inference for Sentence-level TextGraphs: How Challenging is Meaningfully Combining Information for Science Question Answering? *In Proceedings of the Workshop on TextGraphs (TextGraphs 2018).*
4. **Jansen, P.**, Wainwright, E., Marmorstein, S., and Morrison, C. (2018). WorldTree: A Corpus of Explanation Graphs for Elementary Science Questions supporting Multi-hop Inference. *In Proceedings of the Language Resource and Evaluation Conference (LREC).*
5. Kwon, H., Trivedi, H., **Jansen, P.**, Surdeanu, M., and Balasubramanian, N. (2018). Controlling Information Aggregation for Complex Question Answering. *In Proceedings of the European Conference on Information Retrieval (ECIR).*
6. **Jansen, P.** (2017). A Study of Automatically Acquiring Explanatory Inference Patterns from Corpora of Explanations: Lessons from Elementary Science Exams. *In Proceedings of the Workshop on Automated Knowledge Base Construction (AKBC'2017).*
7. Sharp, R., Surdeanu, M., **Jansen, P.**, Valenzuela-Escarcega, M. A., Clark, P., and Hammond, M. (2017). Tell Me Why: Using Question Answering as Distant Supervision for Answer Justification. *In Proceedings of the Conference on Natural Language Learning (CoNLL).*
8. **Jansen, P.**, Balasubramanian, N., Surdeanu, M., and Clark, P. (2016). What's in an Explanation? Characterizing Knowledge and Inference Requirements for Elementary Science Exams. *In Proceedings of the Conference on Computational Linguistics (COLING).*
9. Sharp, R., Surdeanu, M., **Jansen, P.**, Clark, P., and Hammond, M. (2016). Creating Causal Embeddings for Question Answering with Minimal Supervision. *In Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP).*
10. Sharp, R. **Jansen, P.**, Surdeanu, M., and Clark, P. (2015). Spinning Straw into Gold: Using Free Text to Train Monolingual Alignment Models for Non-factoid Question Answering. *In*

Proceedings of the Conference of the North American Chapter of the Association for Computational Linguistics-Human Language Technologies (NAACL HLT).

11. **Jansen, P.**, Surdeanu, M., and Clark, P. (2014). Discourse Complements Lexical Semantics for Non-factoid Answer Reranking. *In Proceedings of the 52nd Annual Meeting of the Association for Computational Linguistics (ACL)*.

12. Forbes, A., Surdeanu, M., **Jansen, P.**, and Carrington, J. (2013). Transmitting Narrative: An Interactive Shift-Summarization Tool for Improving Nurse Communication. *Proceedings of the 3rd IEEE Workshop on Interactive Visual Text Analytics.*

13. **Jansen, P. A.**, Dunlop, M. J., Golish, D. R., and Gehm, M. E. (2012). Adaptive featurespecific spectral imaging, Proc. SPIE 8365, *Proceedings of 2012 SPIE Defense Security and Sensing Symposium*

Peer-Reviewed Journal Publications

14. **Jansen, P.**, Sharp, R., Surdeanu, M., and Clark, P. (2017). Framing Question Answering as Building and Ranking Answer Justifications. *Computational Linguistics*, 43, 407-449.

15. Fried, D., **Jansen, P.**, Hahn-Powell, G., Surdeanu, M., and Clark, P. (2015). Higher-order Lexical Semantic Models for Non-factoid Answer Reranking. *Transactions of the Association of Computational Linguists (TACL)*, 3, 197-210.

16. Golish, D., Vera, E., Kelly, K., Gong, Q., **Jansen, P.**, Hughes, J., Kittle, D., Brady, D., and Gehm, M. (2012). Development of a scalable image formation pipeline for multiscale gigapixel photography. *Optics Express*, 20, 22048-22062.

17. *** Jansen, P.**, and Watter, S. (2012). Strong systematicity through sensorimotor conceptual grounding: an unsupervised, developmental approach to connectionist sentence processing. *Connection Science*, 24, 25-55.

18. *** Jansen, P.**, Fiacconi, C., and Gibson, L. (2010). A computational vector-map model of neonate saccades: Modulating the externality effect through refraction periods. *Vision Research*, 50, 2551-2558.

19. *** Jansen, P.**, and Watter, S. (2008). SayWhen: An automated method for high-accuracy speech onset detection. *Behavior Research Methods*, 40, 744-751.

Conference and Workshop Publications (not Peer-Reviewed)

20. **Jansen, P.**, and Ustalov, D. (2019). Textgraphs 2019 Shared Task on Multi-hop Inference for Explanation Regeneration. *In Proceedings of the Workshop on TextGraphs (TextGraphs 2019)*

** denotes publications substantially based on work completed as a graduate student.*

Work in Progress

Work Submitted

1. Xu, D., **Jansen, P.**, Martin, J., Xie, Z., Yadav, V., Madabushi, H. T., Tafjord O., and Clark, P. Multi-class Hierarchical Question Classification for Multiple Choice Science Exams. S*ubmitted to LREC 2020.*
2. Walls, R., **Jansen, P.**, and Sabharwal, A. Information Organization, Storage, and Management. Accepted *for Jah., M. (Ed.) Space Domain Awareness.*

Work in Preparation

3. Smith, H., Zhang, Z., Culnan, C., and **Jansen, P.** A Dataset for Detailed Named Entity Recognition for Standardized Science Exams. *In preparation for LREC 2020.*
4. Thiem, S., **Jansen, P.** A corpus of semi-structured explanatory patterns for elementary science. *In preparation for LREC 2020.*
5. **Jansen, P.** A hybrid imperative-declarative knowledge-based action language supporting multi-hop inference for science exam question answering. *In preparation.*

Patents

1. Carrington, J. M., Surdeanu, M., **Jansen, P.**, and Forbes., A. (2018). Clinical Event Management and Communication System. *US Patent App. 15656632.*

Media

Exhibits

2015 **German Museum of Technology**. Open Source Science Tricorder Project placed on permanent exhibit. Berlin, Germany.

Conferences/Scholarly Presentations

Colloquia

2018 **Allen Institute for Artificial Intelligence**, Invited, Distinguished Lecture Series

2016 **University of Albany, Department of Physics**, Invited, Colloquium

Awarded Grants and Contracts

Federal

2018 **National Science Foundation (NSF)**
Title: Explainable Natural Language Inference (Collaborative Research)
Amount: $254,464 (UA portion), total award $499,001
Role: UA PI (PI: Niranjan Balasubramanian, Stony Brook) Effort: PI Jansen effort is 10%

Private Foundation

2017 **Allen Institute for Artificial Intelligence (AI2)**

Title: Explanation-centered Structured Knowledge Base for Science Question Answering

Amount: $60,000

Role: PI

Effort: N/A (awarded as unstructured gift)