

Denis R Newman-Griffis

Curriculum Vitae

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Natural Language Processing, Disability and Occupational Health,
Computational Semantics, Biomedical Informatics, Machine Learning

Publications

*=equal contributor

- 2019 **Denis Newman-Griffis**, Julia Porcino, Ayah Zirikly, Thanh Thieu, Jonathan Camacho Maldonado, Pei-Shu Ho, Min Ding, Leighton Chan, Elizabeth Rasch. Broadening horizons: the case for capturing function and the value of health informatics in its use. *BMC Public Health*, (2019) 19:1288. DOI: 10.1186/s12889-019-7630-3
- Denis Newman-Griffis** and Eric Fosler-Lussier. Writing habits and telltale neighbors: analyzing clinical concept usage patterns with sublanguage embeddings. To appear in *Proceedings of the Tenth International Workshop on Health Text Mining and Information Analysis (LOUHI 2019)*, 2019. URL: <https://arxiv.org/abs/1910.00192>
- Gordon E. Moon, **Denis Newman-Griffis**, Jinsung Kim, Aravind Sukumaran-Rajam, Eric Fosler-Lussier, P. Sadayappan. Parallel Data-Local Training for Optimizing Word2Vec Embeddings for Word and Graph embeddings. To appear in *Proceedings of the 5th Workshop on Machine Learning in HPC Environments*, 2019. URL: <https://drgriffis.github.io/papers/2019-MLHPC.pdf>
- Denis Newman-Griffis** and Eric Fosler-Lussier. HARE: a Flexible Highlighting Annotator for Ranking and Exploration. To appear in *Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing: Systems Demonstrations*, 2019. URL: <https://arxiv.org/abs/1908.11302>
- Denis Newman-Griffis***, Ayah Zirikly*, Guy Divita*, and Bart Desmet. Classifying the reported ability in clinical mobility descriptions. In *Proceedings of the 18th BioNLP Workshop and Shared Task*, (2019) 1-10. DOI: 10.18653/v1/W19-5001
- Brendan Whitaker*, **Denis Newman-Griffis***, Aparajita Haldar*, Hakan Ferhatosmanoglu, and Eric Fosler-Lussier. Characterizing the impact of geometric properties of word embeddings on task performance. In *Proceedings of the 3rd Workshop on Evaluating Vector Space Representations for NLP*, (2019) 8-17. DOI: 10.18653/v1/W19-2002
- 2018 **Denis Newman-Griffis** and Ayah Zirikly. Embedding Transfer for Low-Resource Medical Named Entity Recognition: A Case Study on Patient Mobility. In *Proceedings of the BioNLP 2018 Workshop*, (2018) 1-11. DOI: 10.18653/v1/W18-2301
- Denis Newman-Griffis**, Albert M Lai, and Eric Fosler-Lussier. Jointly Embedding Entities and Text with Distant Supervision. In *Proceedings of The Third Workshop on Representation Learning for NLP*, (2018) 195-206. DOI: 10.18653/v1/W18-3026

- 2017 Thanh Thieu, Jonathan Camacho, Pei-Shu Ho, Julia Porcino, Min Ding, Lisa Nelson, Elizabeth Rasch, Chunxiao Zhou, Leighton Chan, Diane Brandt, **Denis Newman-Griffis**, Ao Yuan, and Albert M Lai. Inductive identification of functional status information and establishing a gold standard corpus: A case study on the Mobility domain. In *2017 IEEE International Conference on Bioinformatics and Biomedicine (BIBM)*, 2017. URL: <http://drgriffis.github.io/papers/2017-BIBM.pdf>
- Denis Newman-Griffis**, Albert M Lai, and Eric Fosler-Lussier. Insights into Analogy Completion from the Biomedical Domain. In *BioNLP 2017*, (2017) 19-28. DOI: 10.18653/v1/W17-2303
- Denis Newman-Griffis** and Eric Fosler-Lussier. Second-Order Word Embeddings from Nearest Neighbor Topological Features. Pre-print: *arXiv:1705.08488*, 2017. URL: <https://arxiv.org/pdf/1705.08488.pdf>
- 2016 **Denis R Griffis**, Chaitanya Shivade, Eric Fosler-Lussier, and Albert M Lai. A Quantitative and Qualitative Evaluation of Sentence Boundary Detection for the Clinical Domain. In *Proceedings of the AMIA Summit on Clinical Research Informatics (AMIA-CRI)*, 2016. URL: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5001746/pdf/2382904.pdf>

Posters and Presentations

- 2019 **Denis Newman-Griffis**. Finding mobility-related information in medical evidence with natural language processing. Invited talk at US Social Security Administration (Data Science Seminar Series), October 2019.
- Denis Newman-Griffis**, Ayah Zirikly, Pei-Shu Ho, Jonathan Camacho Maldonado, Maryanne Sacco, Alex Marr, Albert M Lai, and Eric Fosler-Lussier. Automated classification of mobility activities in free text clinical narratives. Poster presentation, in *Proceedings of the Annual Symposium of the American Medical Informatics Association (AMIA)*, 2019.
- Denis Newman-Griffis**. Kickstarting NLP for whole-person activity information with representation learning and data analysis. Thesis proposal, in *2019 Annual Conference of the North American Chapter of the Association for Computational Linguistics, Student Research Workshop*, 2019.
- 2018 **Denis Newman-Griffis**. Natural language processing approaches to extracting patient functioning from clinical data. Invited talk at Stanford University, Center for Population Health Sciences, March 2018.
- Denis Newman-Griffis**, Albert M Lai, and Eric Fosler-Lussier. Jointly embedding biomedical entities and text with distant supervision. Poster presentation, in *Proceedings of the AMIA Informatics Summit*, 2018.
- 2017 **Denis Newman-Griffis**, Thanh Thieu, Chunxiao Zhou, Diane Brandt, Jonathan Camacho Maldonado, Julia Porcino, Albert M Lai, and Leighton Chan. Characterizing the language of functioning: A corpus analysis illustrating how human function is described in clinical text. Poster presentation, in *Proceedings of the AMIA Summit on Clinical Research Informatics (AMIA-CRI)*, 2017.

Education

- 2014– **PhD student**, *The Ohio State University, Department of Computer Science and Engineering*, Columbus, OH, USA.
Modeling and extracting information regarding patient function from clinical text.
Co-advised by Dr. Eric Fosler-Lussier and Dr. Albert Lai (now of Washington University in St. Louis)

- 2008–2012 **Bachelor of Arts**, *Carleton College, City, Magna cum laude.*
Majors: Computer Science & Russian
- Senior thesis (Computer Science) titled “PIG: Packet Inspection Guru.”
 - Senior thesis (Russian): translation of Georgiy Demidov’s short story, “No Toe Tag,” published in the short story collection, “Five Fates from a Wondrous Planet” (2015).

Teaching/Mentoring

- 2018–2019 Advising Brendan Whitaker, OSU Mathematics; Research project on properties of language representations that contribute to downstream tasks.
- Brendan awarded 3rd place presenter in Statistical and Mathematical Modeling section of 2019 Ohio State Denman Undergraduate Research Forum.
 - Resulted in co-first author paper accepted to RepEval 2019.
- Autumn 2017 CSE 3521 - Survey of Artificial Intelligence I: Basic Techniques
Dept. of Computer Science and Engineering, The Ohio State University

Fellowships

- 2015– **Pre-Doctoral Fellow**, *National Institutes of Health, Clinical Center.*

Professional Experience

- 2012–2014 **Software Developer**, *Fulcrum Software Solutions*, Dublin, OH, USA.
Designed, developed, and deployed applications in the business and healthcare sectors, using the .NET development stack.
- Acted as client contact for design and troubleshooting on multiple projects.

Service

Organizer

- 2020 **Lead Organizer**, *1st Workshop on Artificial Intelligence for Functional Status.*
(anticipated) Convened and leading international organizing committee for new workshop, with anticipated submission of workshop proposal to IJCAI-PRICAI 2020

Departmental Service

- 2015–2018 **AI Seminar Coordinator**, *The Ohio State University*, Columbus, OH, USA.
Coordinated bi-weekly seminar series for student presentations on ongoing AI research at Ohio State.

Reviewer

- 2020 AMIA Informatics, AAAI
2019 ACL, AMIA Informatics, AMIA Annual Summit, NAACL Student Research Workshop, BioNLP, EMNLP
2018 ACL, AMIA Informatics, AMIA Annual Summit, COLING, ACL Student Research Workshop
2017 ACL, AMIA Annual Summit, EMNLP
2016 ACL, AMIA Annual Summit

Other

- 2014– **Volunteer Judge**, *Ohio State Science Day.*
Judged science fair projects of students grades 5–12.
- 2016–2017 **President**, *Columbus Symphony Chorus*, Columbus, OH, USA.

Affiliations

- ACL Association for Computational Linguistics
- ACM Association for Computing Machinery
- AMIA American Medical Informatics Association
- ASEE American Society for Engineering Education