

# Brendan Kennedy

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I am a 5<sup>th</sup> year computer science Ph.D. student at USC studying explainable NLP and text analysis with Morteza Dehghani. My research focuses on ways to measure theoretical constructs in natural language and developing resources — teaching, software, and applied research — for language analysis in psychology.

## Education

- 2016 – present    📖 **Ph.D., Computer Science, University of Southern California**  
Advisor: Morteza Dehghani, Ph.D.  
Research Topic: Explainable NLP and Text Analysis Methods
- 2012 – 2016    📖 **B.S. Computer Science, Gonzaga University *Magna cum Laude***  
Minors: *Mathematics and Philosophy*

## Research Publications

### Preprints, Under Review & Under Revision

- 1 **Kennedy, B.**, Atari, M., Mostafazadeh Davani, A., Yeh, L., Omrani, A., Kim, Y., Coombs Jr., K., Havaladar, S., Portillo-Wightman, G., Gonzalez, E., Hoover, J., Azatian, A., Cardenas, G., Hussain, A., Lara, A., Omary, A., Park, C., Wang, X., Wijaya, C., ... Dehghani, M. (R&R at Language Resources and Evaluation). The gab hate corpus: A collection of 27k posts annotated for hate speech. PsyArXiv.  
🔗 <https://doi.org/10.31234/osf.io/hqjxn>
- 2 Hoover, J., Atari, M., Mostafazadeh Davani\*, A., **Kennedy\*, B.**, Portillo-Wightman, G., Yeh, L., Kogon, D., & Dehghani, M. (R&R at Nature Communications). Bound in hatred: The role of group-based morality in acts of hate. PsyArXiv. 🔗 <https://psyarxiv.com/359me/>
- 3 **Kennedy, B.**, Atari, M., Mostafazadeh Davani, A., Hoover, J., Omrani, A., Graham, J., & Dehghani, M. (R&R at Cognition). Moral Concerns are Differentially Observable in Language. PsyArXiv.  
🔗 <https://doi.org/10.31234/osf.io/uqmtq>
- 4 Jin, X., Barbieri, F., Mostafazadeh Davani, A., **Kennedy, B.**, Neves, L., & Ren, X. (under review). Efficiently Mitigating Classification Bias via Transfer Learning. 🔗 <https://arxiv.org/abs/2010.12864>
- 5 Mostafazadeh Davani, A., Omrani, A., **Kennedy, B.**, Atari, M., Ren, X., & Dehghani, M. (under review). Fair Hate Speech Detection through Evaluation of Social Group Counterfactuals. 🔗 <https://arxiv.org/abs/2010.12779>

### Conference Proceedings

- 1 **Kennedy\*, B.**, Jin\*, X., Mostafazadeh Davani, A., Dehghani, M., & Ren, X. (2020). Contextualizing hate speech classifiers with post-hoc explanation, In *Proceedings of the 2020 annual conference of the association for computational linguistics*. 🔗 <https://www.aclweb.org/anthology/2020.acl-main.483/>
- 2 Mostafazadeh Davani, A., Atari, M., **Kennedy, B.**, Havaladar, S., & Dehghani, M. (2020). Hatred is in the eye of the annotator: Hate speech classifiers learn human-like social stereotypes, In *Proceedings of the 42nd Annual Conference of the Cognitive Science Society*.
- 3 Courtland, M., Mostafazadeh Davani, A., Reyes, M., Yeh, L., Leung, J., **Kennedy, B.**, Dehghani, M., & Zevin, J. (2019a). Modeling performance differences on cognitive tests using lstms and skip-thought vectors trained on reported media consumption., In *Proceedings of the Third Workshop on Natural Language Processing and Computational Social Science (NLP+CSS)*. 🔗 <https://www.aclweb.org/anthology/W19-2106.pdf>

- 4 Courtland, M., Mostafazadeh Davani, A., Reyes, M., Yeh, L., Leung, J., **Kennedy, B.**, Dehghani, M., & Zevin, J. (2019b). Subtle differences in language experience moderate performance on language-based cognitive tests, In *Proceedings of the 41st Annual Conference of the Cognitive Science Society, Austin, Texas. Cognitive Science Society.* <https://cogsci.mindmodeling.org/2019/papers/0280/0280.pdf>
- 5 Mostafazadeh Davani, A., Yeh, L., Atari, M., **Kennedy, B.**, Portillo-Wightman, G., Gonzalez, E., Delong, N., Bhatia, R., Mirinjian, A., Ren, X., & Dehghani, M. (2019). Reporting the Unreported: Event extraction for analyzing the local representation of hate crimes, In *Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing and 9th International Joint Conference on Natural Language Processing (EMNLP-IJCAI)*.
- 6 **Kennedy, B.**, Carrazza, M., Rasin, A., Furst, J., & Raicu, D. (2015). Applying association rule mining to semantic data in the lung image database consortium, In *Proceedings - 15th IEEE International Conference on Data Mining Workshop, ICDMW 2015*.

## Journal Articles

- 1 Hoover, J., Portillo-Wightman, G., Yeh, L., Havaladar, S., Mostafazadeh Davani, A., Lin, Y., **Kennedy, B.**, Atari, M., Kamel, Z., Mendlen, M., Moreno, G., Park, C., Chang, T., Chin, J., Leong, C., Leung, J., Mirinjian, A., & Dehghani, M. (2020). Moral Foundations Twitter Corpus: A Collection of 35k Tweets Annotated for Moral Sentiment. *Social Psychological and Personality Science*.
- 2 Garten, J., **Kennedy, B.**, Hoover, J., Sagae, K., & Dehghani, M. (2019). Incorporating Demographic Embeddings Into Language Understanding. *Cognitive Science*, 43(1). <https://doi.org/10.1111/cogs.12701>
- 3 Garten\*, J., **Kennedy\***, B., Sagae, K., & Dehghani, M. (2019). Measuring the Importance of Context when Modeling Language Comprehension. *Behavior Research Methods*, 51(2), 480–492.
- 4 Hossain, K., Gao, S., **Kennedy, B.**, Galstyan, A., & Natarajan, P. (2018). Forecasting violent events in the Middle East and North Africa using the Hidden Markov Model and regularized autoregressive models. *Journal of Defense Modeling and Simulation*.

## Book Chapters

- 1 **Kennedy, B.**, Ashokkumar, A., Boyd, R., & Dehghani, M. (forthcoming). Text analysis for psychology: Methods, principles, and practices (M. Dehghani & R. Boyd, Eds.). In M. Dehghani & R. Boyd (Eds.), *The Atlas of Language Analysis in Psychology*. Guilford Press.

## Software and Data Resources

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|--------------------------------------|--|
| Neural Text Analysis Pipeline (NTAP) | ■ Lead designer & developer of a Python package for high-level interface for applying modern NLP techniques for text analysis ( <a href="https://pypi.org/project/ntap/">https://pypi.org/project/ntap/</a> ). |
| Gab Hate Corpus (GHC)                | ■ Lead author for defining “hate-based rhetoric” and typology used for labeling 27,000 social media posts ( <a href="https://osf.io/edua3/">https://osf.io/edua3/</a> ).                                       |

## Employment History

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|--------------------------------|---|
| 5/2019–5/2020, 12/2020–present | ■ <b>Research Assistant</b> , Department of Psychology, USC           |
| 1/2018–5/2018, 8/2018–5/2019   | ■ <b>Teaching Assistant</b> , Computer Science Department, USC        |
| 8/2016–12/2017                 | ■ <b>Research Assistant</b> , Computer Science Department, USC        |
| 6/2015–9/2015                  | ■ <b>Research Experience for Undergrads (REU)</b> , Depaul University |

## Teaching Assistantships

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Applied Machine Learning	■ Grading, lectures, and content creation. Material: ISLR and Deep Learning with R ( <i>Fall 2020</i> )
Data Structures & Object Oriented Design	■ Object-oriented principles, recursion, search trees, graph algorithms in C++ ( <i>Summer 2020</i> )
Artificial Intelligence	■ Search, knowledge representation, logic to computer science upper-classmen ( <i>Spring 2019</i> )
Intro to Programming	■ Programming concepts and object-oriented programming in C++ ( <i>Spring 2018, Fall 2018</i> )

## Skills

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Programming (Experienced)	■ <i>Experienced:</i> Python, R <i>Capable:</i> C++, Java, PHP, SQL, JavaScript
Python libraries	■ pandas numpy nltk spacy gensim tensorflow keras pytorch matplotlib seaborn
R packages	■ tidyverse stats lme4 MASS
Miscellaneous Skills	■ $\text{\LaTeX}$ , Git, Vim, MS Office, Google Suite, Markdown, Beamer

## References

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