Taylor Olson

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Education

Northwestern University, Evanston, IL

PhD Computer Science, Advisor: Ken Forbus, Qualitative Reasoning Group, 2018 - Present

University of Northern Iowa, Cedar Falls, IA

B.S., Computer Science, 2018

B.A., Mathematics, 2018

Minor in Philosophy

Kirkwood Community College, Cedar Rapids, IA

Mechanical Engineering Transfer Program, 2014

Research Interests

I'm currently investigating normative theories, logical reasoning, and machine learning for ***creating artificial intelligence systems with social and moral competence.***

Publications

Olson, T. (Forthcoming 2024). Towards Unifying the Descriptive and Prescriptive for Machine Ethics. In P. Wu , M. Salpukas, H. Wu, S. Ellsworth (Eds.), *Trolley Crash: Approaching Key Metrics for Ethical AI Practitioners, Researchers, and Policy Makers*. Elsevier.

Olson, T., & Forbus, K. D. (2023, June). Mitigating Adversarial Norm Training with Moral Axioms. In Proceedings of the AAAI Conference on Artificial Intelligence (Vol. 37, No. 10, pp. 11882-11889).

Olson, T. (2022). Towards Unifying the Descriptive and Prescriptive for Machine Ethics. *Proceedings of the AAAI 2022 Spring Symposium on "Approaches to Ethical Computing Metrics for Measuring AI's Proficiency and Competency for Ethical Reasoning"*.

Olson, T. & Forbus, K. (2021). Learning Norms via Natural Language Teachings. *Proceedings of the 9th Annual Conference on Advances in Cognitive Systems 2021.*

Talks and Presentations

Invited talk (Virtual), Mitigating Adversarial Norm Training with Moral Axioms, Second International Workshop on Computational Machine Ethics, 20th International Conference on Principles of Knowledge Representation and Reasoning (KR2023), 2023.

Talk, Mitigating Adversarial Norm Training with Moral Axioms, AAAI-23, 2023.

Guest lecture, *Intelligent Tutoring Systems,* Intro to Cognitive Modeling, Northwestern University, Fall 2022

Talk, *Towards Unifying the Prescriptive and Descriptive for Machine Ethics*, AAAI-22 Spring Symposium on "Approaches to Ethical Computing Metrics for Measuring AI's Proficiency and Competency for Ethical Reasoning", Spring 2022.

Guest lecture, *Deontic Logic,* Knowledge Representation and Reasoning (KRR), Northwestern University, Winter 2022

Talk, *Learning Norms via Natural Language Teachings,* The Ninth Advances in Cognitive Systems (ACS) Conference, 2021

Guest lecture, *Intelligent Tutoring Systems,* Intro to Cognitive Modeling, Northwestern University, Fall 2021

Guest lecture, *Philosophy and KRR - Deontic Logic,* Knowledge Representation and Reasoning (KRR), Northwestern University, Winter 2021

Guest lecture, *Statistical Modeling - Introduction to Neural Networks,* Intro to Cognitive Modeling, Northwestern University, Fall 2020

Guest lecture, *Philosophy and KRR,* Knowledge Representation and Reasoning (KRR), Northwestern University, Winter 2020

Talk, *Artificial Intelligence in Curriculum Design*, National Conference for McNair Scholars and Undergraduate Research, University of Maryland, March 2018

Invited talk, *Artificial Intelligence and Recommender Systems*, McNair Seminar Series, University of Northern Iowa, September 2017

Talk, *Recommendation System Developer*, Joint Research Experience for Undergraduates Summer Symposium, Harvard University, August 2017

Honors and Awards

Cognitive Science Fellowship, Northwestern University, 2018-2019

4th Place, Midwest Instruction and Computing Symposium Programming Contest, 2017

1st Place at site, ACM Programming Contest, 2016

Ronald E. McNair Postbaccalaureate Achievement Program, 2016

Student of the Month, Kirkwood Community College, 2014

NSF Engineering Scholarship, Kirkwood Community College, 2012-2014

Engineering project featured in local newspaper, 2012

All-Region Basketball, Kirkwood Community College, 2012-2014

Software

Norms Reasoner

https://github.com/TeeOhh/Norms-Reasoner

An application and web interface for running our model of Moral Intuition and Construction on the Moral Conventional Transgression (MCT) Task experiment.

tRECS

https://github.com/TeeOhh/tRECS

Python NLP package and graphical interface capable of cleaning text data, building various statistical and vector space models, and creating recommender systems. With Janie Neal, Christiana Prater-Lee, and Eshita Nandini.

UMLS-Similarity-Viewer

Python package for graphical user interface to UMLS-Similarity, a similarity querying package built on top of the UMLS database of medicines, chemical compounds, and adverse drug reactions.