Jared Knofczynski

Ph.D. Student and Internet Data Scientist

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Education

University of Oregon, Department of Computer Science — *Eugene, OR*

Ph.D. in Computer Science with an emphasis on Machine Learning. — *June 2024 (expected)*

Bachelor of Science (Honors) in Mathematics and Computer Science, minor in Music Technology. — *March 2022*

Skills

Design 2D (Adobe Photoshop & Illustrator), 3D (Blender, Maya), Game Design (Unity), Texturing (Substance Painter & Designer)

Programming Python, C, C#, C++, HTML/CSS, JavaScript, Bash

Audio Audacity, Ocenaudio, Ableton, Logic Pro, Max/MSP, PureData

Experience

Internet Data Science Researcher — *Eugene, OR*

Oregon Network Research Group, University of Oregon — *Nov. 2020 - Present*

- Conducting machine learning research for networking applications using deep-learning frameworks such as PyTorch, Keras, and Tensorflow.
- Published "ARISE: A Multi-Task Weak Supervision Framework for Network Measurements" in *IEEE JSAC*, July 2022.

Learning Assistant & Student Ambassador — *Eugene, OR*

University of Oregon Department of Computer Science — *October 2019 - March 2022*

- Worked with a team of undergraduate researchers and faculty from the Oregon Health & Science University to create a computational modeling framework intended to simulate the transmission of airborne pathogens (i.e., COVID-19) in academic settings.
- This research was conducted as part of the *altREU* program at Portland State University and the results were published in their library archive.

Undergraduate Researcher — *Portland, OR*

Teuscher Labs, Portland State University — *Jun. 2020 - Aug. 2020*

- Worked with a team of undergraduate researchers and faculty from the Oregon Health & Science University to create a computational modeling framework intended to simulate the transmission of airborne pathogens (i.e., COVID-19) in academic settings.
- This research was conducted as part of the *altREU* program at Portland State University and the results were published in their library archive.

Computer Science & Digital Arts Instructor; Assistant Camp Director — *Portland, OR*

ID Tech — *Jun. 2019 - Aug. 2020*

- Taught computer science and digital art concepts to high school students remotely and in a summer camp setting.
- Also acted as Assistant Director for one season, helping oversee daily operations and lead other instructors in preparing lesson plans.

Projects & Publications

A Multi-Task Framework for Network Measurements (2022)

Designed and implemented a multi-task machine learning framework for classifying time-series network data, built with PyTorch and Snorkel. Findings published in *IEEE Journal on Selected Areas in Communications*, July 2022.

INHUMAN RESOURCES (2021)

Final project for CIS 410 Game Design – a short game made in Unity with an emphasis on physics, art, and sound design. I was responsible for implementing gameplay logic, as well as environment and sound design. Source code available at github.com/j-red/Inhuman-Resources.

Combating COVID on College Campuses (2020)

An agent-based modeling framework designed in collaboration with faculty from the Oregon Health & Science University to simulate the transmission of airborne pathogens in academic settings. Findings published in Portland State University's online library archive.

Laser Oscilloscope (2019)

An analog oscilloscope for performance art constructed with a Bluetooth speaker, a broken mirror, and an empty yogurt container. A detailed breakdown can be found at j-red.github.io/portfolio/laser-oscilloscope/.

Additional research, scholarship, and reference information available upon request.