Andre Ye

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Research Experience

Research Lead, Allen School January 2023 – Present

Leading a project investigating cross-cultural biases in vision understanding AI models. Collaborating with PhD student Sebastin Santy. Advised by professors Ranjay Krishna and Amy Zhang.

Research Intern, Deepgram June 2022 – September 2022

Deepgram develops powerful deep speech recognition APIs for developers. At Deepgram, I developed novel curriculum training infrastructure and practices to target data contamination, correct problematic model behavior, significantly improve convergence speed, and improve performance in some cases while training large speech models on millions of hours of audio.

Research Lead, Social Futures Lab @ Allen School February 2022 – Dec 2022

Designed and ran a study with PhD student Quanze (Jim) Chen in the HCI-centered Social Futures Lab to develop a data annotation protocol for high-stakes image segmentation problems like pathology to directly mark uncertainty into the data itself rather than inferring uncertainty from model outputs second-hand, the objective being to develop more robust and self-aware computer vision models. In submission to IJCAI '23.

Research Lead, Interactive Intelligence January 2022 – January 2023

Interactive Intelligence (I2) is an independent student research group at the UW focusing on developing human-like cognition in deep learning models. Led the Emergent Language group to build deep learning models which develop "their own" novel system of language generation and interpretation.

Research Assistant, Najafian Lab @ UW Medicine March 2021 – May 2022

Developed a successful semantic segmentation deep learning system at the Najafian Lab, which explores the pathology of kidney diseases. Utilized complex data flows and advanced computer vision mechanisms to maximize model success. Created new techniques in the deep learning segmentation of high-precision, localized cellular objects.

Service and Involvements

Philosophy of Deep Learning Lead, Interactive Intelligence January 2022 – Present

Led a reading and writing group with weekly meetings on topics in the philosophy of deep learning.

Teaching Assistant, Robinson Center September 2022 – Present

Teaching assistant for English class in the Transition School. Assisted with grading and curriculum development and hosting office hours.

Reboot Fellowship Member January 2022 – March 2023

Participated in the Reboot Fellowship, a program for students to think about and discuss technology, power, and humanity. Produced a piece to be published in Reboot magazine on conceptualizing novel forms of labor in large language models such as GPT.

Teaching Assistant, Allen School March 2022 – June 2022

CSE 163, Intermediate Data Programming (Spr '22). Graded homework, hosted office hours, contributed to course material, taught weekly sections, responded to student inquiries in email and person.

Volunteer Data Scientist at CoronaWhy April 2020 – May 2021

CoronaWhy is an international group of volunteers working to analyze and model COVID-19 data to aid the pandemic. Worked with team members to develop Transformer models to search and synthesize COVID-19 literature; ran analyses of internal communication to boost team efficiency.

Research Work

- "Confidence Contours: Uncertainty-Aware Annotation for Medical Semantic Segmentation". Currently in submission to the International Joint Conference for AI '23.
- "Emergent Language: Independent AI Development of Human-Like Syntax". Research performed with Interactive Intelligence. Discovering AI @ UW Conference hosted by the eScience institute, May 23rd. Poster presentation. Facilitated the development of a novel language-like communication protocol between deep neural networks.
- "A Novel Approach to Segment Annotations in Electron Microscopy Images of Glomerular Podocytes". Research performed with Najafian Lab for the Pathobiology of Kidney Diseases, UW Medicine. 25th Undergraduate Research Symposium at the University of Washington, May 20th. Oral presentation. *Session proceedings and abstract*. Improved deep semantic segmentation of kidney abnormalities using a curriculum adaptation.
- "The Wartime State and the Cigarette: Darkness and Temporality in *Pale Horse, Pale Rider*". *The Explicator*, Volume 80, 2022, Issue 1-2. 18 Apr 2022.

Publishing and Authorship

Author

- *Modern Deep Learning Design and Applications*, *Apress*, May 2021 – December 2021. Unifies modern deep learning advancements and concepts through intuitive theory.
- *Deep Learning for Tabular Data*, *Apress*, September 2021 – August 2022. A wide survey of deep learning theory and applications to tabular data, one of the first published in the field.

Technical Reviewer November 2021 – Present

Testing code, determining the accuracy of author content, and making revisions and suggestions to increase clarity and communication in data science books. Completed: *Building Data Science Solutions with Anaconda* by Packt, *Deep Learning Model Optimization with Neural Network Intelligence* by Apress.

Data Science and Artificial Intelligence Writer and Editor March 2020 – April 2021

Wrote over 300 data science and artificial intelligence articles here for various top data science publications. Awarded the Gold and Silver Medal from KDnuggets; Top Writer in AI and Technology by Medium. View a list of curated articles here.

Education

University of Washington Seattle, Washington

Double major in Philosophy and Computer Science, minor in Russian language.