Andre Ye

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EDUCATION

University of Washington — **Seattle, WA**
B.S., Computer Science. B.A., Philosophy with Honors. — *Sep. 2021 – Jun. 2025*
Minor in mathematics. Early Entrance Program. 4.0 GPA.

RESEARCH

Cultural and Linguistic Diversity Improves Vision Representations — **Allen School of CSE, University of Washington**
Advisors: Ranjay Krishna, Amy Zhang. *Mentor*: Sebastin Santy. *See*: [P2] (1st author) — *Feb. 2023 - Oct. 2023*
Examined differences in visual perception across cultural and linguistic backgrounds manifest in vision datasets, models, and APIs. Demonstrated effects on the 'perception' of models trained on content from different languages/backgrounds.

Uncertainty Annotation in Medical Semantic Segmentation — **Social Futures Lab, University of Washington**
Advisor: Amy Zhang. *Mentor*: Quan Ze (Jim) Chen. *See*: [P1] (1st author), [T3], [T4] — *Feb. 2022 - Jan. 2023*
Designed an efficient uncertainty annotation method & interface for medical semantic segmentation, collected annotations in user studies, trained models to produce uncertainty-segmentations on novel samples, and demonstrated its utility for clinicians.

Theory of (Moral) Meaning in LLMs — **Allen School of CSE (UW), Stanford Dept. of CS**
Advisor: Jared Moore. *Collaborator*: Mark Pock. *See*: [P3] (joint 1st author) — *Mar. 2023 - Oct. 2023*
Thesis: Insofar as morality is a social(ogical) object with a complex geneology and LLMs learn the statistical structure of social totality, unaligned LLMs grasp morality in concept. We distinguish value pluralism *in content*, the current 'default', and pluralism *in concept*.

Curriculum Learning for Large-Scale Audio Transcription Models — **Deepgram**
Advisor: Andrew Seagraves. — *Jun. 2022 - Sep. 2022*
Developed more data-efficient methods for audio transcription model training by designing data 'curricula', or specialized pathways through the dataset, yielding up to a 2x speedup. Analyzed the content distribution of datasets & scaling laws to determine optimal curricula.

Segmenting Local, Small, and Specialized Kidney Artifacts — **Najafian Lab, UW Medicine**
Advisor: Behzad Najafian. *Collaborator*: David Smerkous. *See*: [T1] — *Mar. 2021 - May 2022*
Facilitated in-house data collection pipeline and designed high-performance methods for developing a custom model to segment small, specialized artifacts in electromicroscopy images of the glomerulus (kidney). Segmentations have critical diagnostic significance.

PUBLICATIONS

Peer-Reviewed

[P1]: **Andre Ye**, Quan Ze Chen, and Amy Zhang. "Confidence Contours: Uncertainty-Aware Annotation for Medical Semantic Segmentation." In the Eleventh AAAI Conference on Human Computation and Crowdsourcing (HCOMP), Nov. 2023. arXiv

Workshops

[P2]: **Andre Ye**, Mark Pock, Jared Moore. "LLMs grasp morality in concept." NeurIPS Moral Psychology and Moral Philosophy Workshop, Dec. 2023. arXiv

In Submission

[32]: **Andre Ye**, Sebastian Santy, Jena D. Huang, Amy Zhang, Ranjay Krishna. "Cultural and Linguistic Diversity Improves Visual Representations." In submission to ICLR 2024. arXiv

Books

[P4]: **Andre Ye**. *Modern Deep Learning Design and Application Development*. Apress Berkeley (Springer Nature), November 2021. 451 pages. https://doi.org/10.1007/978-1-4842-7413-2.

[P5]: **Andre Ye**, Zian (Andy) Wang. *Modern Deep Learning for Tabular Data*. Apress Berkeley (Springer Nature), December 2022. 842 pages. https://doi.org/10.1007/978-1-4842-8692-0.

TALKS & POSTERS

[T1]: "A Novel Approach to Segment Specialized Annotations in Electron Microscopy Images of Glomerular Podocytes". 25th Undergraduate Research Symposium, May 2022. Talk.
[T2]: "Emergent Language: Independent AI Development of a Language-Like Syntax." Discovering AI Conference at the eScience Institute, May 2022; NeuroAI Seattle Meeting, September 2022. Poster.
[T3]: "Confidence Contours: Uncertainty-Aware Annotation for Medical Semantic Segmentation." 26th Undergraduate Research Symposium, May 2023. Talk.
[T4]: "Confidence Contours: Uncertainty-Aware Annotation for Medical Semantic Segmentation." Allen School Undergraduate Research Showcase, May 2023. Poster.

TA

Teaching Assistant, CSE 160 & 163 (Data Programming) — **Allen School of CSE**, *Mar. 2022 - Present*

TA for introduction Python and data programming course. Helped students from a wide variety of academic backgrounds and interests develop data skills.

Teaching Assistant, English Composition & Literary Analysis — **Robinson Center**, *Sep. 2022 - Present*

TA for introductory through intermediate level composition and literary analysis courses. Designed and taught units on critical/cultural and media theory.

Teaching Assistant, Introduction to Machine Learning — **The Coding School (TCS)**, *Sep. 2022 - Jun. 2023*

TA for TCS' online, nationwide introductory ML course for disadvantaged or underrepresented high schoolers and middle/high school educators.

VOLUNTEERING & COMMUNITY INVOLVEMENT

Conference Reviewer

2023 NeurIPS Moral Psychology & Philosophy Workshop, 2023 ICML AI + HCI Workshop

Philosophy of Deep Learning, Group Leader — **Interactive Intelligence**, *Sep. 2022 - Aug. 2023*

Organized and led small group meetings. Each week, we discuss assigned book excerpts / papers. Completed *On the Existence of Digital Objects*, Yuk Hui. Encouraged CS students to take interest in philosophy, and philosophy students to take interest in CS topics.

Reading Group Coordinator & Web Support — **Philosophy Department**, *Jun. 2023 - Aug. 2023*

Organized, coordinated, and provided web support for summer reading groups and lectures at the Philosophy Department.

Research Head — **Interactive Intelligence**, *Jan. 2022 - Jun. 2023*

Spearheaded and supported research at Interactive Intelligence, a student-run neuroscience and AI research group. Advised ongoing projects, advocated for compute resources (raised over $25k), helped onboard new students. Led the Emergent Language group and presented a poster at [T2].

Coronavirus Literature Retrieval Team Member — **CoronaWhy**, *Apr. 2020 - Jun. 2020*

Assisted a large team working on a question answering and scientific research retrieval model for COVID-19.

AWARDS, SCHOLARSHIPS, FELLOWSHIPS

HCOMP 2023 Student Scholarship, Reboot Fellowship Recipient, NASA Space Hackathon Global Nominee, Kaggle Master