

Asa Gilmore

University of Washington, Neuroinformatics Research and Development Group
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Education

In Progress: Bachelor's Of Science in Mathematics
University of Washington

2023-Present

Publications

1. Aahana Basappa, Pranay Goel, Anusri Karra, Anish Karra, **Asa Gilmore**, Kevin Zhu. (2025). AMVICC: A Novel Benchmark for Cross-Modal Failure Mode Profiling for VLMs and IGMs. NeurIPS 2025, 1st Workshop on VLM4RWD. <https://openreview.net/forum?id=vDkdG55rDL>.
2. John Kruper, McKenzie P Hagen, François Rheault, Isaac Crane, **Asa Gilmore**, Manjari Narayan, Keshav Motwani, Eardi Lila, Chris Rorden, Jason D Yeatman, Ariel Rokem. (2024). Tractometry of the Human Connectome Project: resources and insights. Frontiers in Neuroscience, Volume 18, <https://doi.org/10.3389/fnins.2024.1389680>.
3. John Kruper, Adam Richie-Halford, Joanna Qiao, **Asa Gilmore**, Kelly Chang, Mareike Grotheer, Ethan Roy, Sendy Caffara, Teresa Gomez, Sam Chou, Matthew Cieslak, Serge Koudoro, Eleftherios Garyfallidis, Theodore D. Satttherthwaite, Jason D. Yeatman, Ariel Rokem. (2025). A software ecosystem for brain tractometry processing, analysis, and insight. PLOS Computational Biology, <https://doi.org/10.1371/journal.pcbi.1013323>

Works in Progress

1. **Asa Gilmore**, Anita Esi Eshun, Yue Wu, Aaron Lee, Ariel Rokem. (2025). Vessels hiding in plain sight: quantifying brain vascular morphology in anatomical MR images using deep learning. BioRxiv, <https://doi.org/10.1101/2025.05.06.652518>

Research Experience

Undergraduate Researcher at UW Neuroinformatics R&D Group September 2023 - current

- Implemented Parallel Tractography and Diffusion modeling in open source Diffusion analysis libraries DIPY, and pyAFQ.
- Developed a deep learning based Vessel Segmentation tool for anatomical MRI imaging.
- Currently developing a volumetric foundation model for neuroimaging data, utilizing a self supervised transformer model.

Machine Learning Researcher at Algoverse June 29th 2025 - September 31st 2025
Led teams of four on machine learning research projects such as:

- utilizing Adversarial autoencoders for scanner harmonization on Tractography data.
- Applying confidence calibration methods to Anat2Vess

Awards

- Awarded \$50,023 in compute by NAIRR to train a neuroimaging foundation model, see (NAIRR240391), (2024)
- Awarded \$10,000 in compute by the University of Washington eScience institute for exploratory research on model architectures for volumetric foundation models in neuroimaging.