

Workshop 2: Model Cards for Scientific Machine Learning: Transparency, Accountability, and the Future of Documentation

Tuesday 20 May 2025 14:00 (2 hours)

As machine learning becomes central to scientific discovery—from neuroscience to climate modeling—new tools are needed to document models in ways that support transparency, replicability, and responsible reuse. Model cards offer a structured format for reporting how an ML model works, where it performs well (or poorly), and what limitations or risks it carries. Originally proposed to address fairness in commercial AI, model cards are now being adapted for scientific settings, where openness and rigor are equally essential.

In this seminar, we explore how model cards can support not only ethical reflection but also scientific clarity. We will compare them to traditional methods sections, examine real examples (including from biomedical AI), and critically evaluate when—and how—model cards should be written. Participants will also create their own mini-model card sketches, and we'll close by considering how these tools might evolve in the context of large foundation models and domain-specific scientific norms.

This seminar is ideal for early-career researchers using ML in the sciences, especially those interested in reproducibility, interpretability, and responsible deployment.

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