November 19, 2025

Journal of Machine Learning Research

Dear Editors:

We are writing to submit our manuscript "**Implementing Attention and Transformers without Neural Networks: Validation of Gauge-Theoretic Transformers**" to the *Journal of Machine Learning Research*.

Our manuscript presents **a novel implementation of an attention based transformer without utilizing any neural weights or networks** which is important because **it validates our theory which explains transformer attention through fundamental geometric principles and performs better than standard transformer attention predicated on neural architectures**.

This is an original submission not based on prior conference work.

We suggest the following action editors and referees for our submission.

Action Editors:

- **Marco Cuturi, Apple (cuturi@apple.com)**
- **Silvia Chiappa, DeepMind (silvia.chiappa@uniroma3.it)**
- **Kai-Wei Chang, UCLA-CS (kwchang@cs.ucla.edu)**
- **Michael Mahoney, University of California at Berkeley (mmahoney@stat.berkeley.edu)**
- **Lorenzo Rosasco, University of Genova, Italy and Massachusetts Institute of Technology (lrosasco@mit.edu)**

Reviewers:

- **Taco Cohen, Meta AI Research (taco.cohen@gmail.com)**
- **Marc Finzi, Carnegie Mellon University (mfinzi@cs.cmu.edu)**
- **Thomas Parr, University College London (thomas.parr.12@ucl.ac.uk)**

Our submission has the following keywords: **multi-agent systems**, **variational inference**, **transformer attention**, **free energy principle**, **gauge theory**.

As the corresponding author, I confirm that none of the co-authors listed below have a conflict of interest with the action editors and referees I suggest above. Further, I confirm that all co-authors below consent to my submission of this manuscript to the *Journal of Machine Learning Research*.

Sincerely,

Robert C. Dennis (Independent Researcher)