Kiril Klein, PhD

Machine Learning Engineer

kiril.vadimovic.klein@gmail.com | Copenhagen, Denmark

PROFILE

Machine Learning Engineer with a PhD in Machine Learning and Causal Inference. I build end-to-end ML systems, from data pipelines and model training through validation, containerization, and production integration. My work spans transformers, NLP on clinical data, and causal inference on longitudinal electronic health records.

CORE SKILLS

- **Machine Learning:** deep learning, transformers, pre-training and fine-tuning, NLP on clinical data, sequence modeling, XGBoost, LightGBM, TF-IDF.
- **Tools:** Python, PyTorch, PyTorch Lightning, Hydra, scikit-learn, Pandas, NumPy.
- **Engineering:** ETL pipelines, Docker, Git, Bash, CI/CD, Azure, HPC.
- **Languages:** English (professional); Russian and German (native); French and Danish (basic).

EXPERIENCE

Machine Learning Engineer

Aiomic, medical AI, Copenhagen | 09/2025 – present

- **ML architecture:** building the product ML stack from scratch, combining transformers with classical NLP/ML components (TF-IDF, XGBoost) into a single pipeline — from data preparation and training through to production integration.
- **Delivery:** developing ETL pipelines and containerizing ML services with Docker; introduced CI/CD and mandatory pull-request code review.
- **Validation:** running blinded validation of the ML system on historical data from a large US clinical system.
- **Data requirements:** defining required data, identifying missing fields, and preparing technical data requests for the team interfacing with the clinical partner.

PhD Fellow, PHAIR project (Innovation Fund Denmark)

Pioneer Centre for AI, DIKU, University of Copenhagen | 09/2022 – 03/2026

- Implemented and trained a transformer from scratch on structured longitudinal EHR data, then fine-tuned it for predictive tasks.
- Coordinated development of PHAIR-EHR, a causal-inference extension of CORE-BEHRT, and made the largest individual contribution to the current collaborative BONSAI codebase in a five-person team.
- Applied causal-inference methods to estimate treatment effects on observational clinical data where randomized trials are not feasible.
- Co-author on the international MEDS initiative for standardized machine learning on structured medical data.

Research Assistant

DIKU, University of Copenhagen | 09/2021 – 08/2022

- Built pipelines for clinical metadata and brain MRI scans; maintained the dataset behind a series of ML projects and owned data quality and secure transfers.

SELECTED PUBLICATION

- **CORE-BEHRT: A Carefully Optimized and Rigorously Evaluated BEHRT**. *Proceedings of Machine Learning Research, volume 252*, 2024. *(joint first authorship)*

EDUCATION

PhD in Machine Learning and Causal Inference

University of Copenhagen | 09/2022 – 03/2026

- Dissertation: *"Scalable Causal Inference on Electronic Health Records Using Transformers"*.

MSc in Computational Physics

University of Copenhagen | 09/2020 – 06/2022

- Thesis: *"Brain Volumetric Changes due to COVID-19: A Retrospective Study on a Danish Cohort"* — retrospective MRI analysis using statistical and machine learning methods.

BSc in Physics

University of Erlangen-Nuremberg, Germany | 09/2017 – 08/2020

- Thesis: *"Deep Learning with Uncertainty Quantification for Acceleration of 7T CEST MRI Acquisition and Reconstruction"*.

SPEAKING AND TEACHING

- **Invited speaker and panelist, D3A Conference, Denmark** (October 2024) — adopting AI tools in clinical practice.
- **Teaching Assistant, Advanced Topics in Deep Learning, Department of Computer Science, University of Copenhagen** (autumn 2024) — modern deep learning architectures.