Kirtan Padh

PhD Student | Causality and Machine Learning

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Working on designing more robust and reliable machine learning systems and the exploring the role that causality plays there. Trying to understand how we can ensure that we design AI systems that are a net benefit to society in the present and in the long run.

Work and research experience

TU Munich, Helmholtz AI, *Doctoral researcher*, Germany — Mar 2021 – Present
Researching causal machine learning under the supervision of Prof. Niki Kilbertus. Working towards making causal inference methods more useful in the real world, and exploring the role of causality in designing more ethical algorithms.

TechSpark Academy, *Project manager, New ventures digital platform (part-time)*, Switzerland — Apr 2020 – Feb 2021
Worked as a consultant project manager for TechSpark Academy for the creation of their online course system.

Swisscom Digital Lab, *Research intern*, Lausanne, Switzerland — Feb 2020 – Sep 2020
Collaboratively designed, implemented and open-sourced a framework (link) for multi-objective optimization. Closely involved in the formulation and implementation of the *Ethics in AI principles* of Swisscom.

EPFL, *Research assistant (part-time)*, Switzerland — Sep 2016 – Feb 2019
Worked under the supervision of Prof. Ola Svensson on research questions in graph based combinatorial optimization, such as the capacitated k-center problem and the exact matching problem.

Goldman Sachs, *Strategy summer analyst*, Bengaluru, India — May 2016 – Jul 2016
Designed and implemented a model for attributing profit and loss from the stock loan business to client hedge funds.

Education

Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland — 2020
M.Sc. in computer science, *Specialization in data analytics*.

Indian Institute of Technology Kanpur (IIT Kanpur), India — 2016
B.S. in mathematics and scientific computing, *Minor in theoretical computer science*.

Selected publications

Stochastic Causal Programming for Bounding Treatment Effects (link). *Kirtan Padh, Jakob Zeitler, David Watson, Niki Kilbertus, Matt Kusner, Ricardo Silva.* CLeaR (Causal Learning and Reasoning) 2023 (oral). — 2023

Addressing fairness in classification with a model-agnostic multi-objective algorithm (link). *Kirtan Padh, Diego Antognini, Emma Lejal-Glaude, Boi Faltings, Claudiu Musat*. UAI 2021 (oral). — 2021

Scholarships and awards

ELLIS PhD (link). European Laboratory for Learning and Intelligent Systems. — 2023 – Present
Outstanding reviewer award, ICML 2022. — 2022
Part of the **Research Scholars MSc Program** (link) for computer science, EPFL. — 2016 – 2019
3rd prize in the **Combinatorial Problem Solving Contest**, EPFL. — 2015
KVPY fellow (link). Secured *All India rank 7* in the KVPY fellowship award 2012. — 2013 – 2016
Selected to represent India in the **Asian Science Camp**, Japan (link). Best poster award at the camp. — 2013
INSPIRE fellowship (link) from the Department of Science and Technology, Government of India. — 2012 – 2013

Selected talks

Panel on **Cross-cutting perspectives on EU governance of AI and protection of consumers**, Symposium on consumer protection in the context of AI regulations, Université d'Artois, Douai, France — 2022
Correlations vs. Causality, AI Governance Forum, Switzerland — 2022
Multi-objective fairness in classification, UAI 2021, Virtual — 2021

Academic service

Technical Advisor, AI Transparency Institute, Switzerland
Reviewer : ICML 22, UAI 22, NeurIPS 22, ICML 23, UAI 23
Program Committee (workshops) : The Neglected Assumptions In Causal Inference, A Causal View on Dynamical Systems

Relevant technical skills : Python, PyTorch, JAX, Docker, Kubernetes, Git, LaTeX
Hobbies and interests : Music, Photography, Hiking. Completed a BA in Music in Tabla in 2011. Hiking most summer weekends.
Languages : English (fluent), French (intermediate), German (basic), Hindi (fluent), Gujarati (mother tongue)