The University of Geneva Particle Physics Department invites applications for a

Doctoral Assistant

to work in the group of Prof. Tobias Golling on an interdisciplinary project to provide High Energy Physics with robust deep density machine-learning tools to bring **predictive, generative and anomaly detection models** to production level and to exploit them in **ATLAS** data analyses with the ultimate objective to maximise the discovery potential for physics beyond the Standard Model. Topics of interest and group expertise include top quark physics, new physics searches, flavor-tagging, particle flow, missing E_T and detector simulation with focus on developing new techniques and methods utilizing or building upon normalizing flows, transformers, diffusion, foundation and surrogate models, optimal transport, graph networks, as well as optimal detector design with machine learning and differential programming.

The successful PhD candidates have (or soon receive) the equivalent of a Master degree with a specialisation in Particle Physics or related activities as well as outstanding grades.

The successful candidates will have the opportunity to **be part of and shape this interdisciplinary project** which is composed of more than 12 PhD students and 3 postdocs **spanning all the way from the development of theoretical ML foundations to their practical applications and generalisation in real-world science questions** in the particle-physics domain and beyond (such as high-energy solar astronomy).

The research thrives on strong collaborations with Prof. Francois Fleuret (Geneva, computer science, expert in deep learning techniques and simulation, and Head of the UniGe Machine Learning group) and Prof. Slava Voloshynovskiy (Geneva, computer science, expertise in theoretically explainable ML, and Head of the UniGe Stochastic Information Processing Group).

The job includes teaching duties as well as opportunities for supervision of undergraduate students and outreach work. Doctoral candidates will normally complete their doctoral requirements within 4 years. Non-francophone candidates are encouraged to achieve proficiency in French.

To apply please provide a CV, grades record, a motivation statement, and arrange for three letters of reference to be sent to Tobias.Golling@unige.ch with the subject “RODEM PhD 2023”. Applications sent by July 17, 2023 will receive full consideration. The position is expected to start as early as October 2023. For further information please contact Tobias.Golling@unige.ch and see https://github.com/rodem-hep.