

The University of Geneva Particle Physics Department invites applications for a

Postdoctoral Position

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 with focus 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. Other topics of interest and group expertise include flavor-tagging, jet-met, normalizing flows, VAEs, transformers, diffusion models, optimal transport and graph networks. **Optimal detector design with machine learning** is of interest for this position with a strong synergy with most of the existing efforts in the group.

The successful postdoc candidates have (or soon receive) the equivalent of a PhD degree with a specialisation in one or more of the areas of

- (i) particle physics
- (ii) computer/data science

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 post includes teaching duties and supervision of undergraduate and PhD students, as well as opportunities for outreach work. Non-francophone candidates are encouraged to achieve proficiency in French during their first year of studies.

To apply please send a CV, a motivation statement, and arrange for three letters of reference to be sent to Tobias.Golling@unige.ch with the subject "RODEM postdoc 2023". Applications sent by January 30, 2023 will receive full consideration. The position is expected to start as early as April 2023. For further information please contact Tobias.Golling@unige.ch.