The **Department of Artificial Intelligence and Human Interfaces (AIHI)** at the University of Salzburg invites applications for a

Ph.D. / PraeDoc position

for the research project **ReDim: Quantifying Dependence via Dimension Reduction** financed by the Austrian Science Fund (FWF).

The project: Detecting and estimating statistical association among random variables is an ubiquitous task. Most concepts of statistical association handle association as an undirected property in the sense that the association between the variables remains unchanged when permuting the variables. In manifold situations, however, one variable may have a stronger influence on another variable than vice versa, considering directed dependence is therefore unavoidable. The latter concept is essential when quantifying the extent of dependence of a single variable on a set of potential explanatory variables (predictability), or when calculating the proportion of explained variance (i.e., the coefficient of determination) of a model. In this project we aim to develop an analytic copula-based framework for quantifying and estimating predictability and explainability in full generality.

The successful candidate will be conducting his/her research under the supervision of the project leader Dr. Sebastian Fuchs. The post holder will strongly benefit from the collaboration with the Lab for Intelligent Data Analytics Salzburg (https://www.plus.ac.at/aihi/der-fachbereich/ida-lab/), IDA Lab, and the expertise of the Salzburg research group on dependence modeling led by Univ. Prof. Dr. Wolfgang Trutschnig.

Salary	Depending on qualifications and according to the standard salary categories for scientific personnel of the Austrian Science Fund, PraeDoc € 2,300.30 (paid 14 times per year), https://www.fwf.ac.at/en/research-funding/personnel-costs)
Duration of employment	36 month
Start date	as of September 2022
Extent of employment	30
Place of work	Department of Artificial Intelligence and Human Interfaces at Paris Lodron University of Salzburg, Hellbrunner Strasse 34, 5020 Salzburg, Austria.

Profile: The applicants should have completed their Master's degree in mathematics / statistics focussing on Probability Theory / Statistics.

Welcome additional qualifications: Knowledge in Dependence Modeling, Mathematical and Asymptotic Statistics; very good programming skills in R or other languages; good command of written and spoken English.

Personality: High level of responsibility and intrinsic motivation, has a commitment to scientific research, is independent and reliable, stamina, willingness to engage in further education, enthusiasm, positive attitude, team skills and initiative.

Please submit your written application to Dr. Sebastian Fuchs, sebastian.fuchs@plus.ac.at no later than **10.07.2022**. Your application should include the following application documents: **CV, certificates and a one-page letter of motivation**. Information on the position will be provided by Dr. Sebastian Fuchs either per telephone at +43 662 8044 5331 or by email at sebastian.fuchs@plus.ac.at.