Instructor: Assoc.Prof. Dr. Andreas HOLZINGER, contact: a.holzinger AT tugraz.at

LV 706.315 From Explainable AI to Causality (Class of 2019)

https://online.tugraz.at/tug_online/wbLv.wbShowLVDetail?pStpSpNr=211125

Semester hours: 2.0 h; ECTS-Credits: 3.0; Type: PV

ECTS-Breakdown (sum=75 h, corresponds with 3 ECTS, where 1 ECTS = 25 h workload):

Presence during lecture	8 * 3 h	24 h
Preparation before and after lecture	8 * 1 h	08 h
Preparation of assignments and presentation	28 h + 2	30 h
Written exam including preparation	1 h + 12 h	13 h
TOTAL students' workload		**75 h**

Class URL: https://hci-kdd.org/explainable-ai-causability-2019

Class Schedule for 2019 (subject to change: please check class URL for any changes):

Nr	*Day, Date*	*Time*	*h*	*Topic*
1	Freitag 8.3.2019	11:00-13:15	3 h	Introduction: From automatic machine learning to interactive machine learning and explainable AI
2	Freitag 15.3.2019	11:00-13:15	3 h	Decision making and decision support: from the underlying principles to understanding the context
3	Freitag 22.3.2019	11:00-13:15	3 h	From Expert Systems to Explainable AI: a short history of DSS = a history of AI and few principles of causality
4	Freitag 29.3.2019	11:00-13:15	3 h	Overview of explanation methods and transparence algorithms: Ante-hoc vs. post-hoc explainability
5	Freitag 5.4.2019	11:00-13:15	3 h	Methods of ex-AI (I): LIME, BETA, LRP, Deep Taylor Decomposition, Prediction Difference Analysis
Time for studying				
6	Freitag 12.4.2019	11:00-13:15	3 h	Methods (II): Visualizing CNN with DCNN, inverting CNN, guided backpropagation, deep generator nets, TCAV
7	Freitag 03.5.2019	11:00-13:15	3 h	(III): Understanding the model: Feature visualization, deep vis, RNN cell state analysis, fitted additive, iML
8	Freitag 10.5.2019	11:00-13:15	3h	(IV): Sensitivity Analysis, Gradients for explanation, DeepLIFT, Grad-CAM, integrated gradients
Preparation for MiniConf				
8	Freitag 24.5.2019	11:00-13:15	3 h	Final exam (written test, 50 %) and oral presentation (talk, 50%)