COURSE DETAIL

INDUCTION: ANALOGY, LEARNING, AND GENERALIZATION IN HUMANS AND MACHINES

Country
United Kingdom - Scotland

Host Institution
University of Edinburgh

Program(s)
University of Edinburgh

UCEAP Course Level
Upper Division

UCEAP Subject Area(s)
Psychology

UCEAP Course Number
158

UCEAP Course Suffix

UCEAP Official Title
INDUCTION: ANALOGY, LEARNING, AND GENERALIZATION IN HUMANS AND MACHINES

UCEAP Transcript Title
INDUCTN:HUM&MACHINE

UCEAP Quarter Units
8.00

UCEAP Semester Units
5.30

Course Description

In this course, students cover topics in human and machine inductive inference. In the first half of the course, students are exposed to the problem of induction and how the problem manifests in a range of domains such as object recognition, categorization, and learning. The focus of the course then turns to analogy and relational reasoning, areas were humans make generalizations across situations and domains with much more success and flexibility than non-human animals and conventional machine learning approaches. Students cover research in analogical reasoning as well as the development of analogical thinking and the representations that support analogy and generalization. The second half of the course focuses on computational theories of how humans and artificial (i.e., machine) systems perform induction and generalization. Students cover broadly the main approaches to representing knowledge and modelling human cognition (symbolic and connectionist models). They then cover how these approaches have been leveraged to explain human induction and learning with focus on traditional production system models, Bayesian models, neural network models, and symbolic-connectionist models.

Language(s) of Instruction
English

Host Institution Course Number
PSYL10176

Host Institution Course Title
INDUCTION: ANALOGY, LEARNING, AND GENERALISATION IN HUMANS AND MACHINES

Host Institution Course Details
http://www.drps.ed.ac.uk/current/dpt/cxpsyl10176.htm#:~:text=Undergraduate%20Co...

Host Institution Campus
Host Institution Faculty School of Philosophy, Psychology and Language Sciences
Host Institution Degree
Host Institution Department
Course Last Reviewed 2023-2024

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