

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 where 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 GENERALIZATION IN HUMANS AND MACHINES

Host Institution Campus

Host Institution Faculty

School of Philosophy, Psychology and Language Sciences

Host Institution Degree

Host Institution Department

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