

Thesis Abstract

No. _____

Registration Number:	<input type="checkbox"/> "KOU" <input type="checkbox"/> "OTSU" No. *Office use only	Name:	Joaquim Silvestre
Title of Thesis: "Computational Resonance", measurement of Human-Computer Interaction in digital design tools that embed AI features			
Summary of Thesis: <p>This Thesis present study on digital tools and their relation with the designer during the design process. To conduct the research new definition and new evaluation method of digital tools is proposed. This new definition helps to analyse the potential of Convolutional Neural Networks (ConvNet) as component of a digital tool for design. ConvNet is a field of research in Artificial Intelligence. This is related to Machine Learning strategies that aim to 'teach' principle to a computer with example data. Teaching to a computer is another way to programme and so, to build digital tools. To conclude, the thesis show how with ConvNet Based system, complex concepts of perception that are hard to programme can be encoded in a computer in order to create a new kind of tool for digital design. Algorithmic design theorise the interaction with computers. The point of this theory is to extend the use of digital tools by encompassing their computational nature in the design practice: Compute design solutions. It requires to set design problems in a way that they can be solved through computation. To manage this computational power, coding is used. Through coding the designer teaches computer how the interaction should happen in order to include computations in the design process. In contrast to this, machine learning principles use indirect way to "encode" knowledge from examples. This thesis study how this way of encoding knowledge impact on the resonance of the Human-Computer Interaction.</p> Keywords: ConvNet, Algorithmic Design, Human-Computer Interaction, Design Process, Computational Creativity			