University of Victoria | Graduate Studies

Notice of the Final Oral Examination
for the Degree of Master of Science

of

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BSc (University of Victoria, 2013)

"A Taxonomy of Software Bots: Towards a Deeper Understanding of Software Bot Technologies"

Department of Computer Science

Wednesday, July 18, 2018
10:00 A.M.
Engineering and Computer Science Building
Room 555

Supervisory Committee:
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Dr. Neil Ernst, Department of Computer Science, UVic (Member)
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Abstract

Software bots are becoming increasingly pervasive in our everyday lives. While bots have been around for many decades, recent technological advancements and the adoption of language-based platforms have led to a surge of new ubiquitous software bots. Although many new bots are being built, the terminology used to describe them and their properties are vast, diverse, and often inconsistent. This hinders our ability to study, understand, and classify bots, and restricts our ability to help practitioners design and evaluate their bots.

The overarching goal of this thesis is to provide a deeper understanding of the complexities of modern software bot technologies. To help achieve this, I reflect on a multitude of existing software bot definitions and classifications. Moreover, I propose an updated definition for bots and compare them to other bot-like technologies. As my main contribution, I formally define a set of consistent terminology for describing and classifying software bots, through the development of a faceted taxonomy of software bots. The taxonomy focuses on the observable properties and behaviours of software bots, abstracting away details pertaining to their structure and implementation, to help safeguard it against technological change. To help bridge the gap between existing research and the proposed taxonomy, I derive a mapping between the terminology used in previous literature and the terminology used in the software bot taxonomy. Lastly, to make my contribution actionable, I provide guidelines to illustrate how the proposed taxonomy can be leveraged by researchers, practitioners, and users.