**Abstract**

This thesis presents the design of an original Intelligent Home Automation Architecture. My work was divided in two phases. The first portion was dedicated to acquiring a thorough understanding of the most successful and diffused Home – Automation commercial architectures. During this phase, I intended to gain a deep appreciation for the variety of organizations, capabilities, limitations, and potential areas of growth of the existing Home – Automation leading systems.

In order to acquire this knowledge, I had to use a reverse engineering approach. The reason for using this methodology arises from the fact that all the products considered in this study are commercially protected as industrial secrets. Consequently, it is not possible to obtain detailed descriptions of their ‘real’ architectures and internal operations. The second part of this thesis presents my personal contribution in the form of a prototype for a Smart – Home Architecture.

My design, called IVA (short for Intelligent Voice Activated) home automation, is primarily driven by the processing of natural language voice commands. I argue that this approach should be attractive to seniors, and people with limited range of mobility. In addition, the hardware needed to implement the system is commonly available and inexpensive. The most sophisticated device in my model is a smart phone, which in most cases, is already own by the prospective user.