**Virtual Machines: The AI of the future**

# Introduction

With the almost exponential rise of the computing industry within the last 100 years, the workload on human computing agents have been reduced significantly. This is in part due to the rise of virtual agents. Virtual agents allow end users to efficiently research a solution while minimizing wait times to reach a customer agent, to complete tasks more efficiently, and to even off load some tasks completely to virtual assistants.

# Body

Virtual agents can be coded in any language, but Python is widely celebrated for being the most AI-based software. In order to construct a virtual agent, one must have an extensive knowledge of libraries and tools such as Pandas, Scikit, Theano, and many more. These tools allow the virtual agent to interpret the command asked, search the available databases, and produce an output.

The beginnings of virtual agents may surprise some with the earliest virtual assistant being created in 1981, it was a device that could understand a small amount of words and digits from 0 to 9.  This led to many advancements in natural language processing that largely helped create the virtual assistants we use today such as Siri or Alexa.

The current models of virtual assistants are highly advanced with natural language processing and ability to complete tasks initiated by the user. With nearly half of the world population (45%) having smartphones, virtual assistants are in the pockets of 3.5 billion people nearly all the time. This technology has seamlessly integrated into our lives and will continue to only grow.

Current studies are being conducted in improving the perception of intelligent virtual agents. A challenging area within this field is that the interface that makes decisions and controls the body is represented in two different dimensions. Perception can then be governed by programmable rules that link the two dimensions together. If this technology grows, then we can seamlessly create virtual agents that can assess our surroundings and provide valuable feedback.

Virtual agents will take on a multitude of roles within our future. One role that may flourish is a virtual human. Mark Sagar, CEO of Soul Machines, is creating a computer that can learn, talk, and interact like a human. His project BabyX aims to create a computer that can mimic the learning of a normal child. There are a multitude of uses for this type of technology, one specific use could be depression helplines. This would automate the sector of helplines and increase efficiency within the economy.  Virtual agents might also make it possible for modern society to leave behind the 40 hour work week without losing efficiency because our assistants can do many tasks for us.

# Conclusion

Virtual assistants have been instrumental in automating processes once done by humans and increasing efficiency within our lives. We must study the technology of the past and present to predict how virtual machines will develop in the future. Additionally, it is our job to regulate the increasing industry of virtual agents and ensure ethical uses of this astounding new technology.

# References

<https://docs.google.com/document/d/1IIkSRjVz0SCRK1QH0B9kFwyX2K2afyZaCGy6W01FZ4c/edit>