

HANZE UNIVERSITY OF APPLIED SCIENCES

ACADAMIC WRITING

INFORMATION COMMUNICATIONS AND TECHNOLOGY

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# Root cause analysis of Microsoft's Tay AI Bot

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## Research Raport

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Root cause analysis of  
Microsoft's Tay AI Bot

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# PREFACE

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In the post propaedeutic phase of the Bachelor's programme Information Communications and Technology, we had to conduct a root cause analysis on a failed AI or IoT project. This report will provide an analysis on technical aspects as well as ethical aspects of the project, the analysis will be supported by a theoretical framework. The conclusion summarizes the conducted analysis. Furthermore, it will serve as a basis for our recommendations.

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# 1. INTRODUCTION/ CASE DESCRIPTION

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-General introduction: introduce the topic, pique the interest of the reader, describe/ explain why the research is relevant.

## 2. PROBLEM CHARACTERIZATION

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Microsoft revealed the creation of a new chatbot called 'Tay', on March 23 2016. Tay was named after the acronym: "Thinking about you". The chatbot interacted with twitter users and learned from the users' input, it did so using frequency analysis. Frequency analysis consists of evaluating phrases and words, more frequently appearing phrases would have a heavier weight. And thus would be used more by the bot when engaging in conversations.

After 24 hours, however, the bot was taken offline for expressing anti-Semitic, racist and discriminating thoughts. For example, when asked if Tay supported genocide, Tay responded with "i do indeed". It was clear that the behaviour was inappropriate so it had to be taken down, as a lot more people could have been offended/ hurt by those tweets. Trolls and racist twitter users had influenced/ taught Tay to use inappropriate language. This is an example of the abuse of the frequency analysis algorithm.

## 3. PROBLEM IDENTIFICATION

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3.1 Failure of the project

3.2 Influencing factors



## 4. THEORETICAL FRAMEWORK

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### 4.1 Theoretical background

### 4.2 Literature review

## 5. METHODOLOGY

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### 5.1 Facts and findings

### 5.2 Technical analysis

### 5.3 Ethical analysis

## 6. CONCLUSIONS

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### 6.1 Summary of result/findings

### 6.2 Hypothesis

## 7. RECOMMENDATIONS

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## 8. BIBLIOGRAPHY

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