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**KENNESAW STATE**  
UNIVERSITY

Ethical Challenges  
of Artificial  
Intelligence and  
Machine Learning

# Project Objective

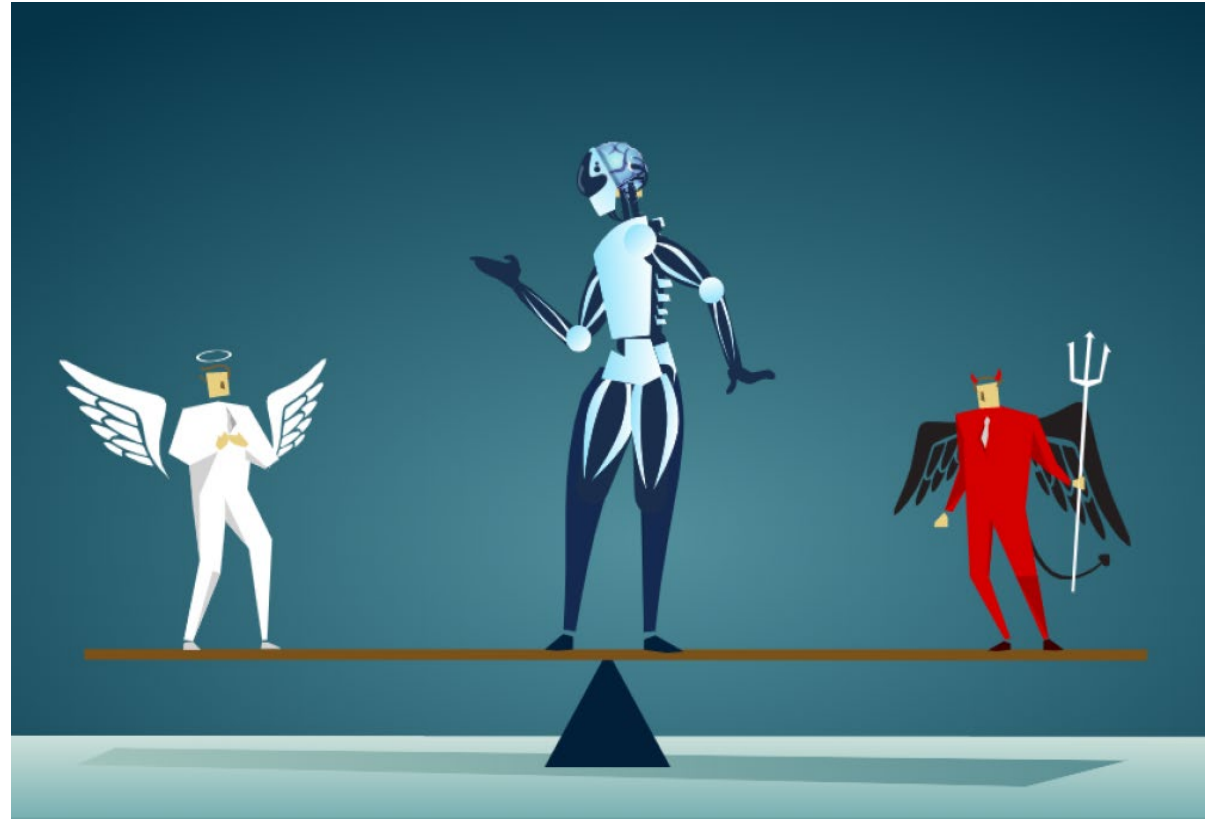
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- To investigate the contributing factors and cases surrounding Artificial Intelligence and Machine Learning
- Asking the question, *Is it Ethical?*
- By overviewing the broad ethical topics addressed by the Association for Computing Machinery

# Introduction

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- We are bringing attention to past events of ethical dilemmas involving A.I. for a better understanding of the correlation of the ethical criteria that apply to both human and synthesized intelligence.
- This includes:
  - The Internet of Things
  - Machine Learning
  - Code of Ethics



# Concise Literature Review

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- ACM Code Of Ethics And Professional Conduct
  - General Ethical Principles
  - Professional Responsibilities
  - Compliance with the Code



# Concise Literature Review

- Face/Off: “DeepFake” Face Swaps and Privacy Laws
  - Explains what “Deepfake” is and how harmful it can be on the average modern person
  - Legal Ramifications of Deepfaking

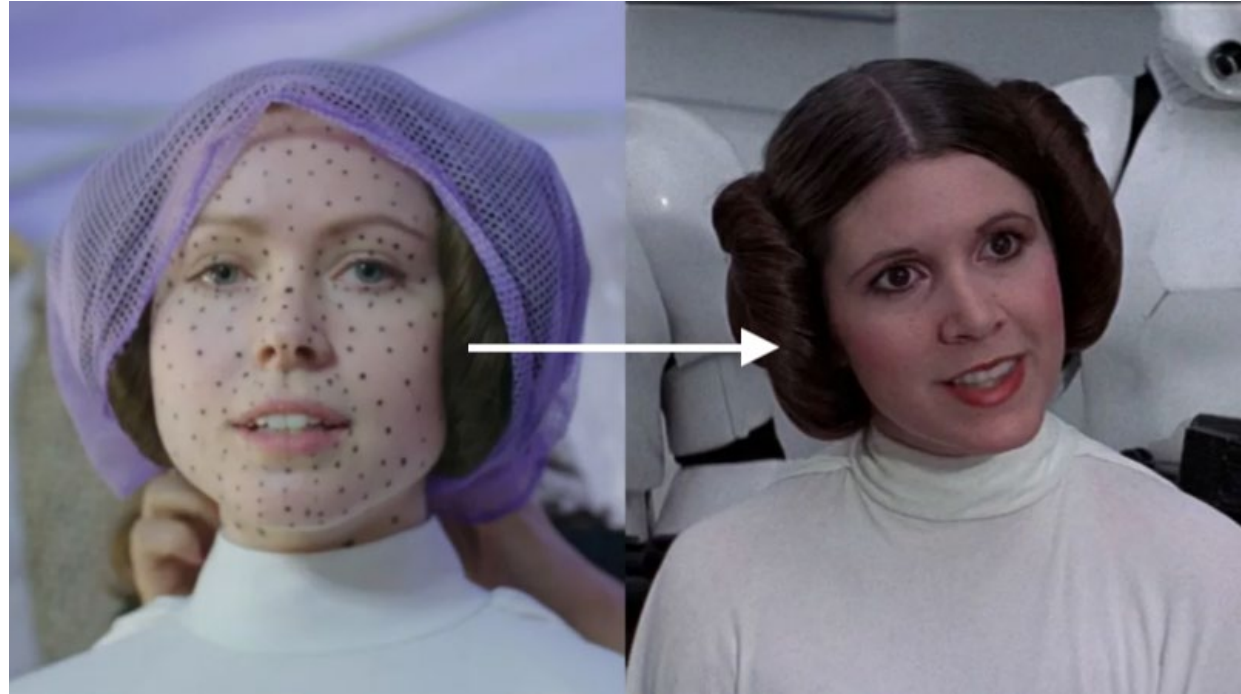


Figure1. Star Wars Rogue One, an actress, along with some CGI magic was used to recreate a young Carrie Fisher. The dots helped map her face accurately. This is not DeepFakes, but this is the sort of thing DeepFakes lets you do without any skill. (Oberoi, G. 2019)

# Concise Literature Review

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- The Ethics of Artificial Intelligence:
  - Who is writing the code?
  - How will it be implemented?
  - How is someone supposed to create an ethical algorithm that would make the machine more ethical than its creator?
  - What standards are both the creator and his creation being held too?

# Concise Literature Review

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- A Challenge for Machine Ethics
  - addresses the reality of robotics being integrated into modern society
  - the consequences of that reality
  - the moral standard the machines and the creators would be held to

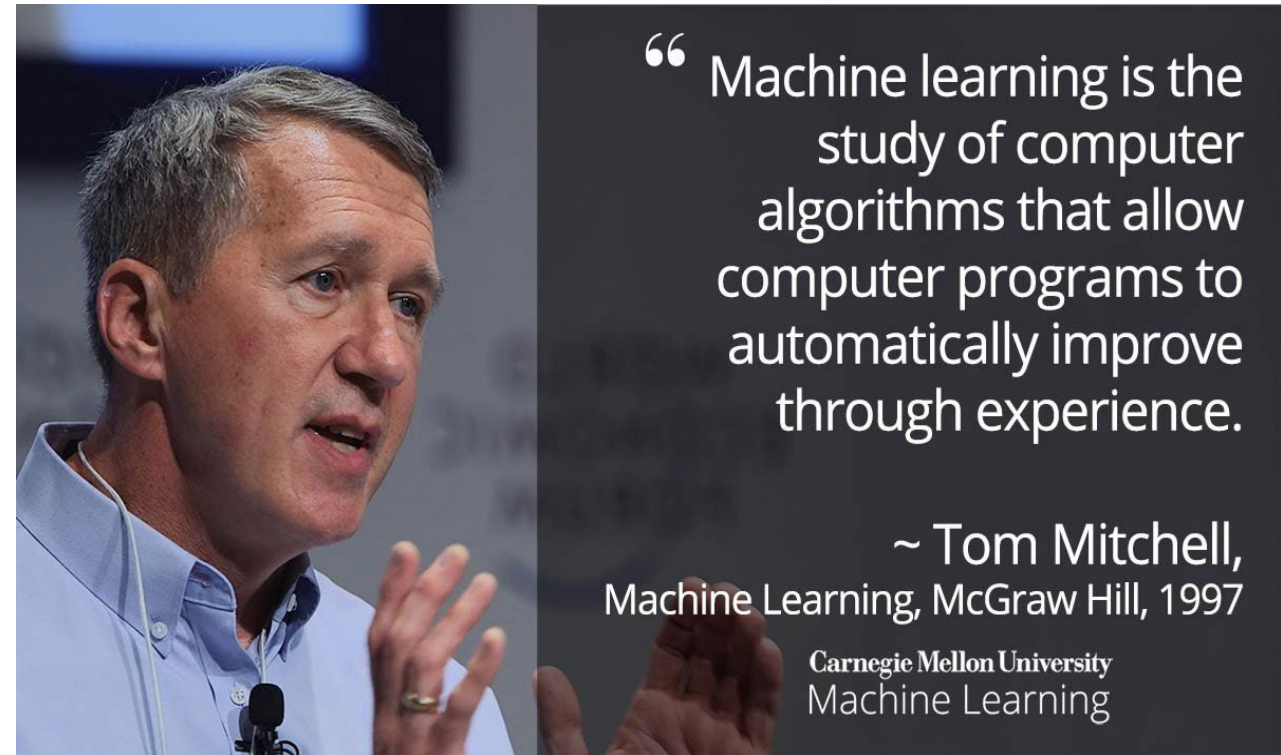


Figure 3. Tom Mitchell on machine learning. (Iriondo, R., 2018).

# Data Analysis

The internet holds an unfathomable amount of information  
So much so that the risks and dangers expressed in our  
results barely scratch the surface  
For an in-depth reference we will be comparing data in the  
“Internet of Things”





# Methodology

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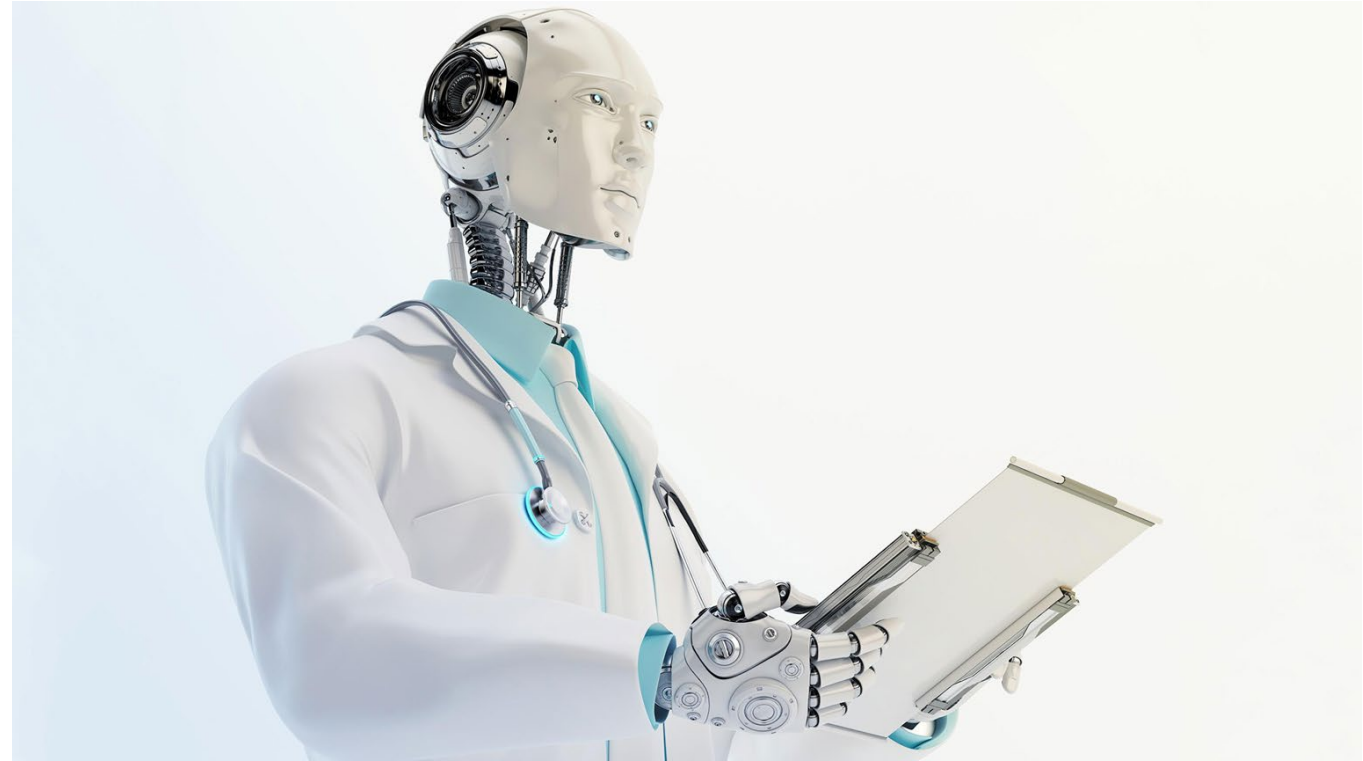
- Fortunately, new exciting prospects are also in competition with RFID systems
  - Machine-to-Machine (M2M) systems
  - It's supposed to develop and maintain faster into an architecture for all sensor network integration and existing M2M systems

# Methodology

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## Medical Field

- The AI implementation in the medical field and the ethical concerns involved seem to be an ongoing debate.
- Cross referencing sources of AI implementation research we see:
  - That the advancements of AI hasn't changed much in the past 10 years
  - The trustworthiness of these systems and how information is handled is a pressing issue



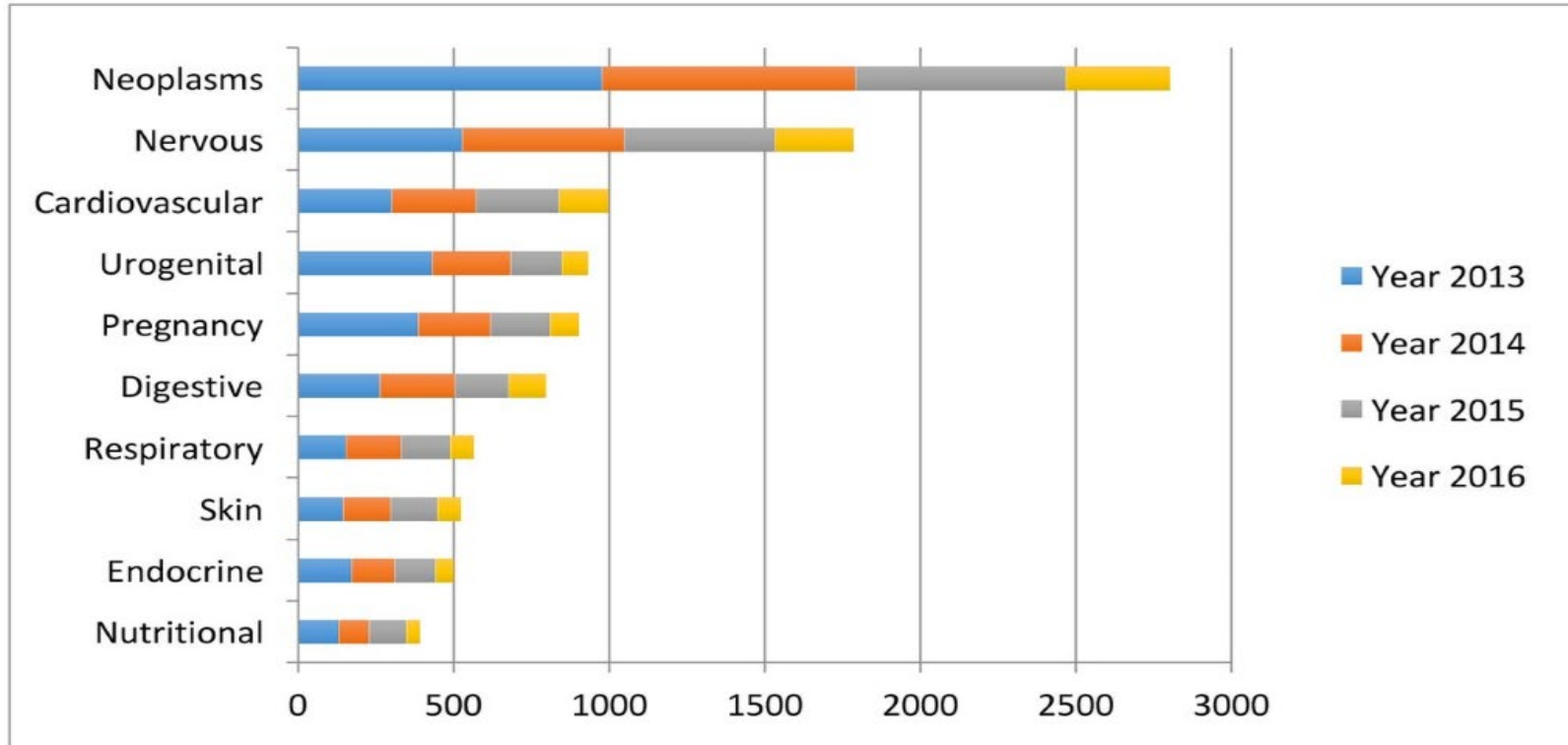
# Methodology

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## Medical Field

- Despite the concerns, some medical facilities already have implemented and use AI systems
- The primary focus of research and intended use for these systems are:
  - Cancer Diagnosis
  - Nervous system Disease
  - Cardiovascular Disease
  - Kidney Disease

# Methodology



**Table 1**

The leading 10 disease types considered in the artificial intelligence (AI) literature. The first vocabularies in the disease names are displayed. (Jiang F, Jiang Y, Zhi H, et al, 2017).

# Results

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## Internet of Things

- We can look at the progress of security with RFID:
  - They offer the greatest amount of security while having the fewest number of issues
  - However, improvements are constantly being made as time passes
  - Will soon become obsolete

# Results

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## Medical Bias

- We see the idea of implementing AI systems in medicine:
  - Still being tested
  - It's hypothesized to be incredibly advantageous
  - However, the potential to be exploited is great



# Results

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## Medical Bias

- Private companies manufacturing these new technologies are likely to:
  - Sell these systems at an inflated price
  - Cut corners to save on cost
  - Control the market



# Results

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## Medical Bias

- The possible outcome for this exploitation:
  - The increase cost for medical assistance
  - Systems would have access to patient data
  - Possible misuse of personal information

# Extended Resources

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- A TED TALK that goes over issues in cyber security/Hacking

- [https://www.ted.com/talks/ken\\_munro\\_internet\\_of\\_things\\_security](https://www.ted.com/talks/ken_munro_internet_of_things_security)



# Extended Resources

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- A TED TALK, discussing the advancements being made with autonomous systems and investments being poured into AI research and development.

- [https://www.youtube.com/watch?v=3oE88\\_6jAwc&t=296s](https://www.youtube.com/watch?v=3oE88_6jAwc&t=296s)



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