[IMPORTANT] Before you start editing this document, make a copy, rename it to **"Lab 0: [your name]"**, and move it to the folder **"Lab 0"** which sits inside the folder **"Student Work Upload"**.

Lab 0: Learn about innovations in AI research[1]

Deadline: Friday 17th January, 5pm.

Over the next six supervisions together, you will be learning about Artificial Intelligence (AI), an important field of study in Computer Science. As you may already know, AI is everywhere: in personal assistants like Siri or Alexa, in recommender systems like Instagram or Netflix, but also in healthcare, finance, etc. There are few industries which do not use some form of AI nowadays. In this lab, you will explore some of the current applications of AI as preparation for our first supervision on Saturday 18th of January.

Choose your topic

Choose one of the following topics (check the one you've selected).

- ❏ **Computer Vision** (driverless cars, assistive technology, etc.)
- ❏ **Healthcare, Human Life, and Well-Being** (disease detection, mental health, medical discoveries, etc.)
- ❏ **Environment, Natural Resources, Wildlife** (sustainable farming, pollution control, wildlife tracking, etc.)
- ❏ **Human-Robot Interaction** (personal assistants, predictive text, chatbots, etc.)
- ❏ **Art, Design, and Culture** (digital artwork, generative art, interactive installations, etc.)
- ❏ **Employment, Economy, Finance** (job creation, financial management, budget tracking, etc.)

Research your topic (~10min)

With your chosen topic as guidance, go online to research how AI is being used to solve problems in your topic area.

Try to find an example that you think is both innovative (it's trying to solve a new problem, or an old problem in a new way) and personally interesting. Here are some links to get you started but you are strongly encouraged to explore beyond.

Computer Vision and Sensors
- **Video**: How computer vision works [link]
- **Article**: Five exciting computer vision applications [link]
- **Video**: AI, Sensors, and Data [link]

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[1] *Credit: edited by Gabrielle Gaudeau for the Cambridge Higher Aspirations Scheme (CHAS) using some material from the open-access AI and Machine Learning ('23-'24) course by the nonprofit Code.org®.*

Healthcare, Human Life, and Well-being

- **Video**: Top AI algorithms in healthcare [[link](#)]
- **Video**: Why we don't have self-driving cars yet [[link](#)]
- **Article**: AI solves a 50 year old science problem [[link](#)]
- **Video**: AI won't replace therapy - yet [[link](#)]

Environment, Natural Resources, and Wildlife

- **Video**: AI and sustainability [[link](#)]
- **Article**: Detecting plastic litter in natural environments [[link](#)]
- **Video**: Saving biodiversity with tech and AI [[link](#)]

Human-Robot Interaction

- **Video**: Interview with a humanoid robot [[link](#)]
- **Video**: How Alexa works [[link](#)]
- **Video**: Creating an "AI baby" [[link](#)]
- **Article**: What are AI chatbots [[link](#)]

Art, Design, and Culture

- **Video**: A tool for dance choreography inspired by AI [[link](#)]
- **Article**: Poem portraits [[link](#)]
- **Article**: Artist style transfer in paintings and video [[link](#)] [[video link](#)]

Employment, Economy, and Finance

- **Article**: How AI can create jobs [[link](#)]
- **Video**: 5 career paths in AI [[link](#)]
- **Video**: The future of your job in the age of AI [[link](#)]
- **Video**: The big debate about the future of work [[link](#)]

Reflect on your research (~10min)

Use the space below to reflect on what you found out during your research (200-400 words). Take notes about interesting products you found, patterns that you've noticed, or problems within your chosen topic that people are trying to address.

Here are some questions to prompt you:
- **What kind of AI application did you find?**
- **Why did you pick this application? What was interesting about it?**
- **Where did you find it (either the website or what you searched for to find it)?**
- **What future can you imagine for this application?**