The task:

* Analysing an existing Information Technology company in the context of the themes discussed in the Professional Issues and Ethics part of the course
  + Go back over these 2 lectures, potentially even the tutorial questions
* I am a fund manager for an ethical investment company (that is, we only invest in things deemed ethical). I need to **decide whether Tesla is ethical**.
* Discuss a range of major professional/ethical issues that are relevant to the decision
  + Have to be IT-related issues, and they have to be an ethical dilemma (there needs to be an ethical aspect and you need to emphasize it). For example, autopilot alone isn’t really an ethical problem, but giving autopilot to the general public is.
* then **provide an overall conclusion about whether the company meets expected standards of ethical behaviour (what are the expected standards? They are the ones from the computer science code of ethics)**
* should also consider actions that could to be taken by the company to redress unethical behaviour (which in the context of this report could be understood as conditions under which investment in the company would be acceptable from an ethical point of view).
  + Renaming autopilot to driver assistance
  + Renaming full self-driving to partial self-driving
* Only cover the most significant issues. You should cover at least 2 issues in depth, then any others just mention them towards the end. Strongest argument first, then second strongest, these are the 2 in depth issues, then final paragraph mentioning all the other issues, briefly addressing and concluding them as well.

Structure:

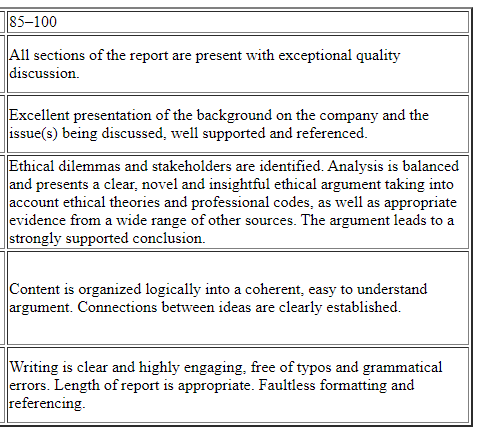
Introduction that outlines Tesla and the ethical issues to be discussed in the essay.

For each issue:

* Provide adequate background on the issue, to provide sufficient context, history and evidence i.e. the report must be self-contained. Just say enough for them to understand the argument.
* Identify the stakeholders. Stakeholders are broadly defined as anyone who is impacted by a decision. They are the ones with something at stake in the ethical dilemma e.g. Tesla has money at stake from lawsuits, people have their lives at stake from getting run over by AI cars, and also their jobs at stake from automation.
* In depth ethical discussion – analyse the issue with ethical reasoning. Present the perspectives from both sides of the issue (stakeholders perspectives), and analyse the issues in terms of ethical theories (duty, consequence-based) as well as one relevant code of conduct/ethics (e.g. the ACS Code of Conduct for an Australian IT company).
* Evidence in the form of reported case studies, (verified) media coverage, legal and court proceedings, and the company's own codes of ethics/conduct and policies including social and environmental responsibility statements, that supports your conclusions.
* Reasonable suggestions for plausible actions that could be taken by the company (or by other bodies) to mitigate the effects of the unethical behaviour.
* A conclusion as to whether the company has acted ethically with regards to this issue.

An overall conclusion must then be reached.

Rubric:



Note, however, that **while** **the rubric provides some guidelines**, **emphasis will be placed on having clear, well-structured arguments** that **demonstrate critical thinking** and an **ability to synthesize and apply the ethics content of the course**. In particular, the **quality** of the report is paramount, e.g. it is not enough to merely identify some (any) **ethical issue(s)**, but to **identify those most relevant** to the company concerned.

Writing a good essay:

Remember that a good essay follows a certain formula. The introduction should be an overview of what is to be covered, and contain the necessary background. Should it conclude anything or reveal the conclusion? You do yourself a service by stating what you are going to do in the essay in the introduction. Paragraphs should always start with the statement of what is going to be discussed, then you provide you arguments, back them up with evidence, then make a conclusion for that paragraph. The conclusion must be conclusive.

Issue dump:

* There’s no solution to a no-win game. That is a dilemma. The issue is that they’re obviously having to decide on an answer. TODO: is **this more of a future issue** for when the Autopilot really is autonomous. It would appear that the software is sophisticated enough at the moment to be making these kinds of decisions anyway.
* Trolley problem, but you don’t decide. The decision has been taken out of your hands and made for you. Solution: there must always be a human override. This is a necessity for investing.
  + The **decision is also being made ahead of time**. Tesla programmers have to decide whether their car will favour the 1 or the 5 in the trolley problem. It’s no longer a reactive decision made in the heat of the moment, but a premeditated one, made deliberately and is calculated. Is it really though? It is machine learning after all. I guess they could change the weights on classification such as child vs adult to favour crashing into adults instead of children.
  + Consequences (mill) would say “kill the one person”, duty/obligation (Kant) would say “don’t turn and let 5 people die” (notice the difference, let die vs kill)
    - most people are utilitarians, so they opt for the “kill as little as possible”, the problem is, they also want the car that won’t ever decide to kill them.
* Ethical dilemma of AI cars mixing with normal cars. Is this a issue worth concern?
* Reporting drivers who go over the speed limit to authorities? The car might know the speed limit of the street it is on and if you take manual control and go significantly over the speed limit, should the car dob you in?
* Tesla cars are basically like big recording boxes, and so if there are crashes we are likely going to know what caused the crash, more so than with normal cars (which MAY have a dash cam). But tesla doesn’t seem to keen on releasing crash data in some cases.
* Taking peoples jobs (tesla auto taxis**) THIS IS A FUTURE ISSUE!** MENTION THAT IN THE SMALL END PARAGRAPH, BUT DO NOT FOCUS ON THIS IN THE ESSAY. **Tesla is not currently doing this!**
  + We’ve made the move towards automation in other areas (self-checkouts), if we don’t allow it to happen then we’ll be working forever.
  + Try link unemployment to suicide? Whole industries will be crushed.
  + There is also the component of taxi drivers and uber type drivers being predominantly immigrants (fact check this), and so it will hurt them more
  + It is clear that autonomous cars will be a reality soon, and so too will be autonomous taxis. You may then try to justify investing in Tesla’s self-driving taxi service because if we don’t, someone else will, but this is not a moral decision, it is a justification.
  + From a consequentialist viewpoint, an autonomous car is worth much more than a normal car, as it can be utilised a lot more e.g. driving old or disabled people, being a Robotaxi whilst you are at work. **Normal cars spend most of their time parked. Autonomous cars can spend most of their time driving. They also replace fossil fuel-based cars with electric ones, so the driving is cleaner.**
* How many deaths are caused by human drivers?
  + <https://www.who.int/news-room/fact-sheets/detail/road-traffic-injuries#:~:text=Key%20facts,road%20traffic%20crashes%20by%202020>.
    - 1.35 million deaths per year from road traffic accidents
  + <https://www.cdc.gov/injury/features/global-road-safety/index.html#:~:text=Whether%20you're%20on%20the,protect%20your%20health%20and%20safety.&text=Each%20year%2C%201.35%20million%20people,on%20roadways%20around%20the%20world>.
* Do we, as an ethical investment firm, have a duty to invest in companies like this, especially to a degree in which we are a significant share-holder, such that our ethical concerns are taken seriously by the company?
  + Investing may be one of the best ways to force the company to be ethical
  + If nothing they are currently doing is unethical, and it all depends on the future (i.e. how they go about taking peoples jobs and eliminating industries)
* People aren’t as forgiving when machines make mistakes (people prefer a mistake to be made by a human, machines are expected to be perfect)
* Different decision making in different regions is not ethical normativism, it’s relativism! <https://cleantechnica.com/2020/08/19/the-moral-ethical-considerations-of-self-driving-vehicles/>
* They will save millions of lives, but they will also take lives along the way. If you’re only concerned with minimizing death, then it’s obviously a good trade-off. Number of deaths may not be the only concern though, it could be that being killed by a self-driving car, rather than a human, is considered worse.
* General computing code of ethics: <https://www.acm.org/code-of-ethics>
* Calling it autopilot when it’s actually a driver assistance software. Even Full Self-Driving is only a level 2 AI (source + explanation of level 2 needed)
* Is it ethical to give FSD technology to members of the public, rather than having Tesla employees who are more contractually obligated to drive safe to do the testing? Is it also unethical to not geofence the testing?
* Tesla saving toddlers and pets being ran over in home driveways
* Drunk driver who fell asleep was saved because of autopilot. Imagine if he was in a normal car.
* The longer we hold back self-driving cars, the number of preventable deaths increases.
* Could also mention some smaller issues in a small paragraph at the end of the essay
  + Electric cars are better for the environment (verify)
  + Tesla cars are built to last, thus saving on resources and further helping he environment (verify)
* Other ai car company’s criticize tesla’s public rollout: <https://www.reuters.com/article/tesla-selfdriving/teslas-release-of-new-self-driving-software-closely-watched-by-u-s-regulator-idUSKBN27727Y>

Repeating themes:

* Programmers make the decisions of how to handle no-win scenarios in advance
* The trolley problem
* Autopilots have trouble detecting stationary objects

Readings/resources/sources

1. <https://www.forbes.com/sites/patricklin/2017/04/05/heres-how-tesla-solves-a-self-driving-crash-dilemma/?sh=c5069d268139>
2. <https://www.businessinsider.com.au/self-driving-cars-already-deciding-who-to-kill-2016-12?r=US&IR=T>
3. <https://www.wired.com/story/teslas-latest-autopilot-death-looks-like-prior-crash/>
4. <https://www.youtube.com/watch?v=ixIoDYVfKA0&t=190s>
   1. Should the AI prioritise the safety of others (i.e. non-occupants of the car), or the safety of the occupants? Or should it try and calculate the most likely target to survive and get them?
   2. Human error is being removed. Acknowledge this towards the beginning of the essay and say how AI self-driving cars will definitely be beneficial, but that doesn’t mean we should ignore the ethical issues involved.
   3. Rules like minimise harm don’t really work. Two motorcyclists, one with a helmet, one without. If you opt to hit the person wearing the helmet, you’re penalising responsible people. If you hit the other one, you’re not picking the minimal harm target. So minimizing harm might also mean punishing responsible people.
   4. The driver of the car doesn’t get to decide anything (unless there is a manual override). Would you choose a car that saves as many lives at all costs or saves your life at all costs?
5. <https://www.youtube.com/watch?v=ozcaLnTuidU>
   1. The trolley problem is mentioned in pretty much every self-driving car blog or video. The key issue is the difference between killing and letting die. Is it worse to kill 1 person than it is to let 5 people die?
   2. People prefer mistakes to be made by humans, not by machines. It seems we have an expectation that machines are better than us, so why should we have them imitate what we would do I crash situation? The car should do what a human should do in that situation, and not what they would do.
6. Ai taxi service videos
   1. <https://www.youtube.com/watch?v=LO1nDnnv_Og>
      1. Goal was to have first Robotaxi in 2020 (but coronavirus lol). A Robotaxi would have no driver.
      2. Any Tesla owner can add their vehicle to the Robotaxi network via the app. They can set it up to only share the car in a particular time window, only share with friends/family, and will earn money from it.
      3. Dedicated Tesla Robotaxis in areas where not enough people are adding theirs to the network.
      4. Steering wheels and pedals will eventually be “deleted” from the car. Mentions as early as 2021.
   2. <https://www.youtube.com/watch?v=8QL302Roips>
   3. <https://youtu.be/Ucp0TTmvqOE?t=10810>
      1. All Tesla cars have hardware redundancy in them i.e. there’s a backup for everything (there is a duplicate of all power and data wires, two power steering motors, two batteries etc.)
      2. Current cost of ride sharing is said to be $2-3 per mile, Robotaxi’s are predicted to cost $0.18 per mile.
      3. Tesla owners can potentially earn $30,000 a year from using their car as a Robotaxi.
      4. Steering wheels will eventually be replaced with a cap, so there’s no human intervention. This is financially motivated (find source of him saying that earlier in the speech), but is it the right decision ethically?
7. <https://www.youtube.com/watch?v=FadR7ETT_1k>
   1. Telsa predicts crash before it happens (black car rolls after red car hits it)
8. FSD Beta Article <https://thedriven.io/2020/11/16/musk-urges-caution-as-testers-say-latest-tesla-fsd-upgrade-to-be-huge-improvement/>
9. FSD Beta – Dirty Tesla : <https://www.youtube.com/watch?v=xaRWlFswgbs>
   1. 8:47 – tesla autopilot tries to turn left instead of right, which would most likely have caused a head-on accident. It didn’t even see the other car, as per the HUD.
   2. 13:48 – autopilot cannot handle roundabout
   3. 10:25 – oncoming vehicle is not registered.
10. Difference between autopilot and FSD
    1. <https://www.tesla.com/support/autopilot> : Tesla’s own article. 2 important points: autopilot naming is shite, and hands-on-wheel is enforced (NAG torque system).
    2. <https://thenextweb.com/shift/2020/06/22/differences-between-teslas-autopilot-and-full-self-driving-system-adas-tech/>
11. Autopilot driving by Dirty Tesla : <https://www.youtube.com/watch?v=2qKCS5p120Q>
    1. 7:18 – autopilot doesn’t break for a sharp turn, he has to intervene
12. Tesla cam, public recording: <https://www.youtube.com/watch?v=za_K0IE0w4E>
13. Falling asleep behind the wheel of a Tesla: <https://www.youtube.com/watch?v=b1S41DQVa1Q>
    1. This also highlight how you do have to keep your hands on the wheel when using autopilot
14. Telsa wont give data to its drivers who have had crashes <https://www.consumeraffairs.com/news/drivers-say-tesla-is-stingy-with-data-after-their-cars-spontaneously-took-off-020518.html>
15. lots of good information and EVIDENCE here <https://en.wikipedia.org/wiki/Tesla_Autopilot#:~:text=9%20External%20links-,Autonomy%20classification,control%20at%20a%20moment's%20notice>.
16. The professional opinion in the field of self-driving cars is that LIDAR needs to be used. Tesla believes otherwise. Tesla has also gone against the industry norms in more than one way. Testing via the public instead of privately.
17. TODO: look into neural network ethical issues (truck being misclassified as an overpass or overhead sign)
18. Two groups say Tesla is being negligent: <https://www.bbc.com/news/technology-44225059>
    1. Also look into the ruling by NTSB here that reliance on Autopilot was a partial cause of the death

1. Autopilot and FSD are misleading
   1. German court bans the names saying they are misleading <https://www.bbc.com/news/technology-53418069> and PAVE citisizes too <https://www.washingtonpost.com/technology/2020/10/21/tesla-self-driving/> (link this to the industry norm being for geofenced driving with professionals in the drivers seat)
   2. Survey shows people think autopilot means they can not pay attention <https://www.iihs.org/news/detail/new-studies-highlight-driver-confusion-about-automated-systems>
   3. Tesla shows that their in house teaching and warnings are educating their drivers enough <https://finance.yahoo.com/news/tesla-germany-owners-understand-autopilot-220954859.html> and <https://www.tesla.com/sites/default/files/blog_attachments/tesla_survey_autopilot_awareness.pdf>
   4. But the bottom line is that a change of name could only really do good, and if it wasn’t called AP or FSD they probably wouldn’t have to spend so much time trying to remind people that they still need to pay attention.
2. Elon went against his own terms and conditions by taking his hands off the wheel
   1. Cbs this morning
   2. 60 minutes interview
   3. Tesla YouTube channel also showcases no hands on driving: <https://www.youtube.com/watch?v=tlThdr3O5Qo>
3. People are either placing too much trust in the Autopilot systems, or are becoming complacent with them, and therefore distracted.
   1. Cite crashes where people are watching shows, playing games, sleeping, on their phone etc.
4. Even small changes such as a timer on the agreement pop-up to enforce drivers actually read it, a small follow-up quiz to ensure they read and understood the information, and a heavier penalty for violating the hands on wheel nag system could all easily be implemented.
5. Crashes where autopilot was on (include info about who is to blame, why the crash happened, death or not etc.)
   1. Concrete barrier death, driver was playing a video game : <https://www.bbc.com/news/technology-51645566>
      1. Someone recreates the crash: <https://thenextweb.com/artificial-intelligence/2018/04/02/human-error-is-teslas-biggest-problem/>
   2. semi-trailer 1:
   3. semi-trailer 2:
   4. overturned truck, shows how Autopilot still fails on really basic situations, <https://www.youtube.com/watch?v=FVgkWii5JdM>
      1. Could it be that the overhang before it caused the weighting of a large stationary object to be ignored?
      2. Highlights the issue that these algorithms work great on situations they see over and over again, but for new situations they don’t really know what to do
6. Saves
   1. Pedestrian saved by Autopilot automatic braking : <https://electrek.co/2016/07/21/tesla-autopilot-saved-life-prevented-serious-injury-pedestrian-dc/>