



Internship | Tackle Climate Change with our Technical Green ICT @ TNO (The Netherlands)

About this position

ICT use has increased tremendously in the past decades. One aspect that has only recently started to receive more attention is its impact on our climate. Current estimations are that the impact of ICT is already larger than the impact of the aviation sector! At TNO, we are actively working on limiting the CO₂e emissions of our digital infrastructure and ICT usage and thereby enhancing its sustainability.

What will be your role?

At TNO, we are on a mission to make a positive impact on the environment by reducing the climate impact of ICT usage. As TNO, we focus on making the impact more transparent by measuring all electricity use of ICT services, and by optimizing the hardware use in the end-to-end service delivery chain. We are looking for motivated technical students who share our mission of a more sustainable future for the ICT sector.

Do you want to be working on reducing the climate effects of AI services such as ChatGPT? Do you believe our screen addictions are not helpful for a sustainable ICT future? Do you want to contribute to more efficient cloud platforms or future 5G and 6G mobile networks? Or do you think the government should take more action? If you feel motivated to achieve more sustainability in ICT and make a meaningful impact during your internship, please contact us!

We are looking for technical students that want to bring their technical analytical skills, software development power and computing platform and general ICT infrastructure knowledge, to help us achieve:

- **The measurement of energy use of ICT services** (scope 2 emissions). ICT services range from Netflix and TikTok to online banking, Google search, social networking, ChatGPT and many business applications. Various hardware components are used while using these services, including servers in a cloud environment, routers in the network, computers, and smartphones. Our objective is to measure and model the energy consumption of these hardware components and create algorithms for allocating the energy usage among different services.
- **Increase efficiency of ICT itself.** Current ICT design did not have sustainability as a design criterium. This is slowly changing for the better. Obviously, newer hardware is often more efficient, but it should not stop here. Services can be optimized, AI algorithms can be improved, cloud usage can be orchestrated, and software can be developed more sustainable. We aim to refactor power hungry frameworks, protocols and systems architectures to prove and realize that for about the same functionality substantial energy/GHG savings can be realized.

Interested check out:

<https://www.tno.nl/en/careers/vacancies/2023/10/internship-tackle-climate-change-our/>