1. Why is technology gendered?

In their work titled "Smart Technologies and Gender: A Never-Ending Story," Sørensen and Lagesen discuss the pervasive gendered dimensions of smart technologies. They contend that this gendering unfolds in two primary ways. Firstly, there's the gendering of the professionals who design and develop these technologies. This often results in a male-dominated industry, characterized by traits such as competitiveness and mathematical skills. Secondly, there's the gendering of the technology itself, which influences its content and form.

Despite the rapid evolution of technology, the authors point out that the gendered nature of smart technologies tends to persist and resist change. This persistence is attributed to Sheila Jasanoff's four ordering instruments: making identities, making institutions, making discourses, and making representations. These instruments serve to uphold the existing status quo.

The identity of information and communication technology (ICT) professionals is described as predominantly male-oriented and exclusive. This identity is reinforced through recruitment policies in the ICT industry, which contribute to its male-dominated nature. Consequently, women are often excluded from the design and development of smart technologies. This exclusion stems from the masculine identity ingrained in design experts, the industry's preference for male employees, gender-blind discourses, and the historical tradition of using men as representatives of humanity.

Interestingly, the absence of women in the design process sometimes results in smart technologies unintentionally aligning with some women's needs. However, these technologies are not consciously designed with women in mind.

Achieving gender diversity in smart technology design is recognized as a complex and long-term challenge. The culture and practices of the ICT industry can often alienate women, making them feel like outsiders in this field.

Efforts to recruit and retain women in computer science and engineering have yielded limited results. The authors suggest that meaningful change in gender balance within the industry will likely require sustained, long-term inclusion efforts. Initiatives such as the EU/US Gendered Innovations Project aim to transform the discourse surrounding gender, science, and technology. These initiatives encourage smart technology designers to actively address gender bias but are expected to yield long-term impacts rather than quick fixes.

Policies like Responsible Research and Innovation (RRI) incorporate concerns for gender equity. However, survey results indicate that explicit engagement with gender issues in research remains somewhat limited, despite efforts to promote gender-balanced teams and support for women within these teams.

In summary, the authors underscore the deep-seated gendered aspects of smart technology design, the challenges in fostering gender diversity, and the need for sustained, comprehensive efforts to promote inclusivity and address gender biases in the technology sector.

2. What is the gender data gap? Ein Bild, das Text, Screenshot, Schrift, Design enthält.

Automatisch generierte Beschreibung

Bias in Gender and Ethnicity Classification: Facial attribute classification, which labels attributes such as gender, age, and ethnicity, also suffers from bias if the training data is not sufficiently diverse. Models trained on non-representative datasets can perform poorly for certain demographic groups. For example, commercial gender classification systems have been found to perform better on men's faces, with an error rate as low as 7%, compared to women's faces, which may have an error rate as high as 35%. Additionally, these systems exhibit a higher error rate for darker-skinned individuals, reaching up to 31%, compared to their lighter-skinned counterparts. This bias can have real-world consequences, such as misclassification and reinforcing harmful stereotypes.

Facial recognition technology stands as a poignant example of the profound impact data gaps can have on the fairness and equity of artificial intelligence systems. As the adage goes, "Algorithms are only as good as the data they use." For facial recognition systems (FRSs), this adage rings especially true.

Firstly, the importance of diverse training datasets cannot be overstated. The inadequacy of training data in terms of both size and diversity can lead to severe biases in FRSs, particularly when it comes to factors such as race, age, and gender. It is crucial that training datasets encompass a broad spectrum of humanity to ensure the technology's accuracy and fairness across diverse populations and contexts.

In conclusion, facial recognition serves as an illustrative example of the gender data gap, demonstrating how inadequate training data, a lack of transparency, and limited understanding of gender diversity can lead to biased and unfair outcomes. Addressing these issues is not only a matter of technological advancement but also a fundamental step toward building a more just and equitable future for all.

3.3 What are some of the key issues with engineering  
practices today that the Critical Engineering Manifesto  
addresses

The Critical Engineering Manifesto confronts various contemporary engineering challenges:

Technology Dependency: It acknowledges the dual nature of technology as both a challenge and a threat when we heavily rely on it. The manifesto underscores the importance of comprehending and unveiling its inner workings.

Techno-Political Literacy: The manifesto stresses the need to continuously adapt our understanding of technology's political and societal implications as it advances.

Deconstructing User Experiences: Critical engineers are prompted to critically analyze and question user experiences, moving beyond superficial admiration to grasp the methods of influence at play.

User Impact: Engineering has a direct impact on users, and this impact scales with their dependency on the technology.

Expansive "Machine" Definition: The manifesto broadens the concept of a "machine" to encompass a wide array of interconnected elements beyond physical devices.

Examining the Production-Consumption Gap: Critical engineers are encouraged to scrutinize the space between technology production and consumption, aiming to reveal imbalances and deceit.

Multidisciplinary Inspiration: Drawing inspiration from diverse fields such as art, architecture, activism, and philosophy is recommended to inform critical engineering practices.

Code's Behavioral Influence: Written code extends into social and psychological realms, regulating human-machine interactions. Critical engineers seek to reshape these dynamics.

Exploiting Vulnerabilities for Exposure: The manifesto views exploitation as a desirable means of exposure, motivating critical engineers to actively uncover vulnerabilities in technology.

In essence, the Critical Engineering Manifesto promotes a critical mindset in engineering, with a central focus on understanding and exposing the ethical, political, and social ramifications of technology

3.4 From your own experience (from your life or from the  
news), share an example of a case when engineers should  
have been critical about a task they received.

One example would be the development of autonomous driving. In many cases, the intelligent software embedded in these vehicles has to make decisions based on programming that raises various ethical questions. Engineers in this field should have sought out the expertise and collaboration of interdisciplinary colleagues, including ethicists, psychologists, and legal experts, to navigate the complex ethical dilemmas that arise in autonomous driving scenarios.

Furthermore, the development of safety measures in autonomous vehicles is another critical area where engineers should have exercised more scrutiny. Ensuring the safety of self-driving cars not only involves technical aspects but also a comprehensive assessment of potential risks, such as cybersecurity vulnerabilities and the reliability of sensors and algorithms. Engineers should have taken a more critical and holistic approach to identify and address these safety concerns through rigorous testing, verification, and collaboration with relevant experts. The consequences of overlooking such safety issues can have serious real-world implications, reinforcing the need for a more critical and multidisciplinary approach to engineering in emerging technologies like autonomous vehicles.

4.3 The Feminist Data Set is “useful art”, one of its key  
messages being that technology should not be allowed to  
remain a black box. If we continue not to have an  
understanding of technology’s internal workings, what  
implications could that have for our future?

5.1 What is a “zine” and what are the larger societal issues  
this zine is addressing?

A "zine," short for "magazine" or "fanzine," is a self-published, often small-circulation, and non-commercial publication typically created by individuals or small groups. Zines are known for their independent and do-it-yourself (DIY) ethos. They can take various forms, such as pamphlets, booklets, or small book-like publications, and cover a wide range of topics, including art, music, literature, politics, social issues, personal experiences, and more.

Zines serve as a platform for individuals to express their thoughts, ideas, and creativity without the constraints of mainstream publishing. They often address niche or marginalized topics that may not receive significant attention in mainstream media. Zine creators have the freedom to explore unconventional and provocative subjects, making them a valuable means of addressing larger societal issues.  
  
This zine takes a creative approach to addressing critical societal issues. Rather than discussing them in a conventional manner, it presents a collection of inventive creations that purposefully demonstrate the profound themes of women's rights to abortion, the gender pay gap, gender inequity, government protests, and political activism.

Through these thought-provoking inventions, the zine offers a fresh perspective on these complex issues. Each creation serves as a tangible representation of the challenges and aspirations associated with women's rights, gender equality, and political activism. Whether it's a cleverly designed invention highlighting the gender pay gap or an innovative project showcasing the power of government protests, this zine invites readers to engage with these topics in a novel and inspiring way.

5.2 Which artefact did you pick and why? What effect did its message have on you?

The abortion drone stood out as the most compelling artifact to me, primarily due to its timeliness and relevance. It's especially striking because Poland, situated very close to Germany, is a place where the concept of abortion is dealt with in an exceptionally conservative manner. This geographical proximity adds an extra layer of poignancy to the issue.

The impact of this message was profound. It made me realize that when faced with injustices, people are willing to unite, even if it means defying laws and risking their own safety and freedom. It serves as a powerful testament to the strength of collective action in addressing societal issues, particularly those as deeply entrenched as restrictive abortion laws.

Share your thoughts: In your opinion, which technological  
practice(s) will we consider immoral in the future, and why?

In my opinion, technological practices that involve AI technologies based on biased data sets will be immoral in the future.

AI systems are increasingly being integrated into different aspects of our lives, from employment decisions and lending practices to the criminal justice system. However, there is a growing awareness that these AI systems can perpetuate or even exacerbate existing biases and discrimination in society as can be seen in the dataset of the gender data gap section.

Bias in decision-making: AI algorithms often learn from historical data, and if that data contains biases, the AI can learn and replicate those biases. For example, if historical hiring data shows a bias against certain demographics, an AI used in the hiring process may perpetuate that bias, leading to discrimination against underrepresented groups.

Reinforcing discrimination: AI algorithms can inadvertently reinforce societal inequalities. In lending, biased algorithms could deny loans to qualified individuals from marginalized communities, exacerbating financial inequalities.

Legal and ethical challenges: The use of biased AI systems in criminal justice raises significant ethical and legal questions. For example, predictive policing algorithms may disproportionately target certain neighborhoods, leading to unfair profiling.

Future moral considerations: In the future, societies may view the use of biased AI systems as deeply unethical. As awareness of the societal impact of AI grows, there may be stronger moral objections to its use in contexts where fairness, equity and justice are paramount.

Addressing these concerns will be crucial to ensuring that AI technology is consistent with evolving moral norms. This will involve developing AI systems that are more transparent, accountable, and able to identify and mitigate bias. In addition, regulation and ethical guidelines will play a central role in shaping the responsible use of AI technology, ensuring that it serves the best interests of society while upholding ethical principles of fairness and justice.