Increasing gender diversity in Computer Science

A research on gender inclusivity in materials provided during the matching and selection process

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Introduction

- Gender inclusivity in Computer Science remains a pressing challenge globally, with women significantly underrepresented.
- Universities play a crucial role in shaping the career trajectories of students, making them pivotal in addressing gender disparities in CS by influencing perceptions and decisions through their selection materials.

Research Question

1. How gender inclusive are the materials created by Dutch universities for matching and selection?

2. How do the materials provided by Dutch universities ensure fairness across all genders?

Methodology

We conducted following heuritics analysis:

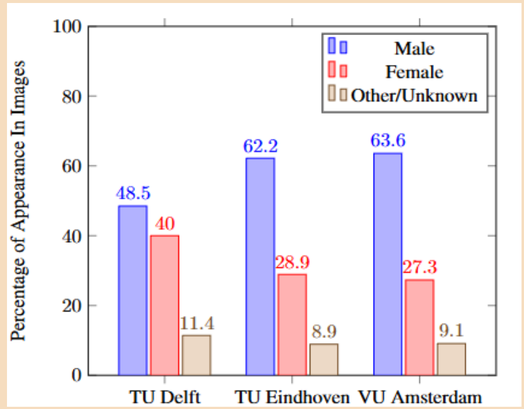
- Language and Imagery: Checked for gender-neutral pronouns and inclusive wording, evaluated imagery for balanced gender representation.
- Female Role Models: Identified visibility of female role models, assessed diversity and context of their roles.
- Educational Background Inclusivity: Reviewed openness to diverse educational backgrounds, noted support programs and inclusivity statements.
- Expectation Setting: Analyzed language for gender-based expectations, checked for encouragement of ambitious goals for all genders.

We studied following univerisities:

- Technische Universiteit Delft
- Technische Universiteit Eindhoven
- Vrije Universiteit Amsterdam

Result

1. Language and Imagery:
   - All universities used second-person pronouns (“you”/”your”) to maintain gender neutrality.
   - Wording was consistently neutral, avoiding gender-specific terms.
   - TU Delft had the most balanced gender representation in imagery, while TU Eindhoven and Vrije Universiteit Amsterdam had higher male representation.



2. Representation of Female Role Models:
   - TU Delft prominently featured female role models in leading roles.
   - TU Eindhoven and Vrije Universiteit Amsterdam featured female role models in less central roles, often highlighting collective achievements over individual leadership.

3. Equal Opportunity Based on Background Education:
   - TU Delft provided extensive preparatory resources and used a normalized scoring system to ensure fairness.
   - TU Eindhoven and Vrije Universiteit Amsterdam offered limited preparatory information and used absolute scoring, which may disadvantage students from diverse educational backgrounds.

4. Expectation Setting:
   - All universities set high expectations for all students without gender bias.
   - Materials emphasized the potential for success and leadership for all genders, using inclusive and supportive language.

Takeaway

1. How gender inclusive are the materials created by Dutch universities for matching and selection?

All three universities use second-person pronouns and neutral wording in language, creating an inclusive and gender-neutral language environment. In addition, TU Delft has balanced gender representation in imagery. TU Eindhoven and Vrije Universiteit Amsterdam have an imbalance, with more male students depicted in prominent roles, which may discourage female applicants.

2. How do the materials provided by Dutch universities ensure fairness across all genders?

Regarding opportunities, TU Delft provided a fair background across different educational backgrounds. TU Eindhoven and Vrije Universiteit Amsterdam offer limited preparatory resources and use absolute scores, potentially favoring certain educational backgrounds and perpetuating biases. While all universities set high, unbiased expectations for success.

Limitation

- Limited University Scope: This study focused on TU Delft, TU Eindhoven, and Vrije Universiteit Amsterdam, not representative of all Dutch universities. Other institutions may have different practices affecting gender inclusivity.
- Subjectivity in Analysis: Analysis conducted by a single researcher, introducing potential bias. Future studies should involve multiple reviewers for cross-verification.
- Scope of Heuristics: Heuristics focused on language, imagery, female role models, and educational background inclusivity. Did not fully explore cultural biases, intersectionality, and non-binary gender representation.
- Temporal Nature of Data:Study captures a snapshot in time; materials and policies can change. Regular, longitudinal studies needed to monitor changes and impacts on gender inclusivity.