

## Implementing GenderMag in the Computer Science Curriculum: A Longitudinal Study

*Proposal for a PhD project to be submitted to the NWO's Doctoral Grant for Teachers programme (to be carried out at the University of Amsterdam, supervised by Prof. Judith Good, director of the Digital Interactions Lab)*

**GenderMag** (short for *Gender Inclusiveness Magnifier*) is a method developed by Dr Margaret Burnett, Dr Anita Sarma and their colleagues to identify and fix gender biases in software design. GenderMag aims to understand the cognitive differences in problem-solving approaches commonly observed among diverse users, such as information processing styles and attitudes toward risk, rather than relying on stereotypes. The technique uses personas which embody these different problem-solving approaches.

GenderMag has a significant body of empirical research behind it, showing that it allows developers to identify “gender bugs” and create more inclusive software as a result (see <https://gendermag.org/research.php>).

On the basis of GenderMag, Margaret and colleagues have developed an entire curriculum for embedding inclusive design in computer science degrees. What is interesting is that doing so often requires minimal effort on the part of instructors (sometimes just adding a single phrase to their existing assignment instructions), but it has been shown to have a significant impact on various aspects of education beyond simply fostering inclusive design practices, such as higher course grades overall, a drop in student withdrawal, more effective teamwork etc. These effects were particularly strong for marginalized groups. This article provides a good summary: <https://dl.acm.org/doi/full/10.1145/3603535>

The (part-time) PhD candidate for this project would be a computer science lecturer who is interested in inclusive design. The candidate would conduct a longitudinal study on the implementation of GenderMag in their CS curriculum and investigate the results. There are a number of different facets that could be examined, including the quality of student work, attitudes to computing, motivation, etc., but the research could also focus on the lecturer side, looking at the impact of embedding inclusive design in the curriculum from the pedagogical side. The exact focus will be discussed and agreed upon by the PhD student and the supervisor.

If you'd like to discuss this proposal in more detail, please contact Judith Good ([j.a.good@uva.nl](mailto:j.a.good@uva.nl))

Relevant links:

NWO Doctoral Grant for Teachers <https://www.nwo.nl/en/researchprogrammes/doctoral-grant-for-teachers>

The Digital Interactions Lab

<https://ivi.uva.nl/research/digital-interactions-lab.html>

GenderMag

<https://gendermag.org/index.php>