COST Action - CA19122
European Network For
Gender Balance in Informatics

- 4 years, starting from the day of the first Management Committee Meeting 18 October 2020
- Initially 24 member countries in the network of proposers
- Currently 39 members countries
- Action Chair: Prof. Letizia Jaccheri, Norwegian University of Science and Technology, Norway Co-Chair Barbora Buhnova Masaryk university, Czechia
- Grant Holder Scientific representative: Informatics Europe, Switzerland

http://eugain.eu/

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UN Goal 5

Achieve gender equality and empower all women and girls. Ending all discrimination against women and girls is not only a basic human right, it's crucial for sustainable future; it's proven that **empowering women and girls helps economic growth and development**.

5 GENDER EQUALITY

Challenge Scarcity of ICT specialists

83.3% of ICT specialists employed in the EU are men

53% of European employers say they face difficulties in finding the right people with the right qualifications.

Kent Beck — Software Engineer
Mike Beedle — Computer Scientist
Arie Van Bennekum — Project Manager
Alistair Cockburn — Computer Scientist
Ward Cunningham — Software Developer
Jon Kern — Program Manager

Martin Fowler — Software Developer
James Grenning — Software Engineer
Jim Highsmith — Software Developer
Andy Hunt — Software Developer
Ron Jeffries — Software Developer
Brian Marick — Computer Scientist

Bob Martin — Software Engineer
Stephen J. Mellor — Computer Scientist
Jeff Sutherland — Software Developer
Ken Schwaber — Software Developer
Dave Thomas — Computer Programmer

Challenge – few CS females in Universities

At the Bachelor level 80% or more of the students enrolling are male.

At the Master level 80% of the graduates are male

At the Ph.D. level, except for Bulgaria, Romania, Estonia, Turkey, 75% of graduates are male

On average, in the whole of Europe, 85% of the full professor positions in Engineering and Technology are taken by male

Software Engineering job advertisements are gender biased toward men

- The software engineering (SE) workforce is dominated by male employees. This is potentially because SE job advertisements are gender biased toward men.
- Kanij, T., et.al. ICSE 2022

A New Approach Towards Ensuring Gender Inclusive SE Job Advertisements

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ABSTRACT

A majority of software engineers are male, perhaps, because of the very way that software engineering (SE) roles are advertised is gender biased. Thus far, only word-based checking tools are available to identify gender biases (e.g., "analyst" is considered a masculine word). However, such word-based analyses end up identifying the skills required for SE job positions as masculine words, and therefore, not sufficient. In this work, we present a more nuanced mechanism to check for gender bias in SE job advertisements by building on the GenderMag method, which has proven to be successful in gender bias detection in software interfaces. From a survey of 44 software practitioners, we identified 16 factors where male and female participants differ and based on a thematic analysis we derived three SE job applicant persona facets. We verified the facets with a small survey where SE candidates related to the descriptions of those factors. We conducted a pilot study using these facets to evaluate four SE job advertisements and identified gender related biases in two of those.

However, these do not take software engineering specific words into consideration. For example the word 'analyst' is considered male using the word-based tools, and therefore any SE analyst position would be seen (incorrectly) to be biased toward men. As a result, such word-based tools are not good enough to accurately assess for gender bias in SE job ads. We present a more nuanced mechanism to check for gender bias in SE job advertisements by building on the GenderMag method. GenderMag has proven to be successful in gender bias detection in software interfaces. This method identifies five dimensions of problem solving (referred to as facets) on which male and female software users differ. From a survey of software practitioners, we identified factors where male and female SE job applicants differ. We grouped the similar factors together and derived three facets that were important to predict job application behaviour of SE job applicants. We validated these facets with some SE candidates and used them to develop 'new' Tim and Abi personas from the facets and evaluated four SE job advertisements. We identified gender related biases in two of these.

The main challenges addressed

1. How to **have more girls** choosing **Informatics** as their **higher education studies and profession.**

1. How to **retain female students** and assure they **finish their studies and start successful careers** in the field.

1. How to **encourage more female Ph.D. and postdoctoral researchers** to **remain** in the **academic career** and apply for **professorships in Informatics** departments.

1. How to **support and inspire young women** in their careers and help them **to overcome the main hurdles** that prevent women **to reach senior positions** in the field.

1. How to **leverage from the experience of the partners in the network** to **tackle the previous challenges** and **achieve progress across more institutions and countries**, and positive **results that are sustained on the longer term.**

WG1: From School to University

- **Objectives**: to update and design a **new set of measures on how to promote the education** and participation of more female students in Informatics higher education; increasing the number of applications and ensuring that students who started will thrive, make their voices heard, and complete their studies.

Tasks and activities:

(i) to collect and evaluate current initiatives existing in the COST Countries and institutions part of the Action, including targeted recruitment initiatives, activities for students (from primary to high school), mentoring and career programmes in academia and industry;

(ii) to organize workshops to share promising and best practices in recruiting and retention;

(iii) to collate examples of how female students voice can be encouraged across universities in generating information and ideas;

(iv) to organize short-term exchange/cross visits;

(v) to develop a Handbook chapter with guidelines helping university departments to recruit and retain female students;

(vi) to draft policy recommendations for local, national and international institutions.

WG2: From Bachelor/Master Studies to Ph.D.

- **Objectives**: to update and design a **new set of measures on how to promote the education and participation of more female students in Ph.D. programs** in Informatics; increasing the number of applications and ensuring that students who started will thrive, make their voices heard, and complete their Ph.D. studies.

- **Tasks and activities:**

I. to collect and assess cross-national action plans/guidelines (national or regional) to inform about research activities and role models in research and education;

II. to collate current interventions/tools to inform about actions both in general terms and specifically regarding gender and diversity issues;

III. to collate examples of how female Ph.D. student voices' can be encouraged across universities in generating innovative research projects and ideas;

IV. to gather evidence on their effectiveness across different groups and with regards to gender and age systematically reviewing completeness of the information, degree of usage, local evaluations carried out, and sustainability;

V. to organize short-term exchange/cross visits,

VI. to develop a Handbook chapter with guidelines helping university departments to recruit and retain female Ph.D. students;

VII. to draft policy recommendations for local, national and international institutions.

WG3: From Ph.D. to Professor

- **Objectives**: to identify successful practices **to recruit more female professors** in Informatics; to limit the dropout rate of women along the path to professorship and leader positions in academia; to help increase the proportion of women in international research projects.

- **Tasks and activities**:

I. to collect experiences from ongoing initiatives in COST Countries universities and assess evidence;

II. to identify HR policies and recruitment strategies aimed at increasing female recruitment and retention within Departments, Institutes/Faculties/Schools, Universities;

III. to organize short-term exchange/cross visits:

IV. to design protocols for collaboration between the management and the employees at the faculty, with a focus on gender equality;

V. career development programme for Ph.D. students and postdoctoral researchers;

VI. to develop a mentor scheme for women at the master's level to associate professor level;

VII. to create international mentoring schemes between women in scientific positions at different levels and in different COST Countries;

VIII. to develop a strategy for recruiting women in externally funded projects, especially for EU funding.

WG4: Cooperation with Industry and Society

- **Objectives**: to assure that cooperation with stakeholders in industry and other sectors exists at a local, regional, national and EU level and that particular issues existing in each country are taken into consideration; to analyse what practices have been put in place for university departments/institutes/faculties/schools to deal with external cooperation with a focus on gender issues; to evaluate, what assessment exists for these practices.

- **Tasks and activities:**

I. to collate evidence of successful industry-university collaboration across partners and countries;

II. to gather and assess evidence of best practices on how collaboration with industry and other sectors have had positive impact on gender balance in Informatics/ICT;

III. to collate action plans/guidelines on integration from national and regional authorities for policy evaluation,

IV. (iv) to engage with the IT/ICT sector to improve the integration of gender balance in their research portfolio and recruitment strategy.

WG5: Strategy & Dissemination

- **Objectives**: to raise awareness about the gender imbalance and bias in Informatics; advocate and lobby for change, to disseminate the Action results to all partners and national networks and reach out to all external stakeholders

- **Tasks and activities:**

I.   assuring the main activities, events, outcomes, deliverables of all WGs have the most optimal visibility and reach the relevant stakeholders;

II.   face to face meetings with relevant policy officers at the EU level and at the National level (involving then the partner(s) in that country);

III.   organization of an Annual European Workshop on gender balance in Informatics/ICT (during the project duration and on the longer term, annually, after the end of the project);

IV.   organization of an European Award for best practices in departments/institutes/schools/faculties of European universities and research labs that encourage and support the careers of women in Informatics research and education (selected by a review panel of international experts).

Leadership Positions

Position	Candidates	Institution/Country
WG1 Leaders	Zeynep Şahin Timar (ITC, Y) Monica Landoni	Karadeniz Technical University, TU Università della Svizzera italiana, CH
WG2 Leaders	Miguel Goulao (ITC, M) Erika Ábrahám	NOVA School of Science and Technology, PO RWTH Aachen University, DE
WG3 Leaders	Steve Kremer (M) Alexandra Silva	Inria, FR
WG4 Leaders	Fanni Bobák (ITC) Karima BOUDAOUD	CWI and Utrecht University, NL HÉTFA, HU Ecole Polytechnique de Nice Sophia Antipolis, FR
WG5 Leaders	Valentina Lenarduzzi Karima BOUDAOUD	Oulu University, FI Ecole Polytechnique de Nice Sophia Antipolis, FR

ITC = Inclusiveness Target Country / M = Man
ECI = Early Career Investigator

Leadership Positions

Position	Candidates	Institution/Country
Science Communication Manager	Maria Roussou	National and Kapodistrian University of Athens, GR
Short-Term Scientific Mission Coordinator	Patricia Lago	Vrije Universiteit Amsterdam, NL
ITC Conference Grant and Training Schools Coordinator	Özge MISIRLI (ITC)	Eskisehir Osmangazi University Faculty, TR
Gender balance coordinator	Petroula MAVRIKIOU (ITC)	Frederick University Cyprus
Young researcher and innovator coordinator	Anna Szlavi (YI)	NTNU Norway

ITC = Inclusiveness Target Country / M = Man
YI = Y Investigator

- Summarize
  - 156 total members
  - New scientific publications and venues (it seemed impossible at start)
- Advantages COST Actions
  - It serves its purpose to create a network and a new scientific field and to create a community of (young) researchers
- Disadvantages
  - Time
  - Attention
  - COST action is different from other projects
  - I wish I had involved my self actively in COST actions before

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https://eugain.eu/news/minerva-informatics-equality-award-2023/
Submit or encourage young women researchers to submit a poster to ACM WomEncourage
https://womencourage.acm.org/2023/

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