A FRAMEWORK FOR INTERSECTIONAL PERSPECTIVES IN SOFTWARE ENGINEERING

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ABSTRACT

The huge demand for software practitioners and the diversity crisis in the software development industry have emphasized the absence of women and other underrepresented minorities. Thus, the diversity crisis is not limited to women, it is about social identities that go beyond gender and race, but it is mainly, about power. Here, we propose a conceptual framework for understanding intersectionality. We posit that a framework can help to incorporate attention to social reproduction of inequities in software engineering by means of the application of the concept to the discipline.

GOAL OF STUDY

To develop framework that aims to help these practitioners incorporate intersectionality into their work to address issues of bias, exclusion, and power dynamics, and ultimately create more ethical, inclusive, and effective software development. The framework is relevant to software engineering practices across various industries, and can be applied to software development projects of different sizes and complexity.

LITERATURE BACKGROUND

Proposed framework is based on Intersectionality theory, which was first introduced by Dr. Kimberlé Crenshaw in 1989. Intersectionality is the idea that individuals are affected by multiple interconnected and interdependent systems of oppression, including race, gender, class, and other social identities.

Originated from black feminist movement, Dr. Kimberlé Crenshaw

- Anti-racism and feminism legislations are not addressing the unique problems of black African women.

The framework aligns with the growing interest in the tech industry to address issues of diversity and inclusion, including efforts by companies to implement diversity and inclusion initiatives and research on the impact of bias in AI and other technologies.

POPULATION TARGETED

The software engineering community, including software developers, designers, testers, project managers, and other stakeholders involved in the software development process.

RESEARCH QUESTION?

How can intersectionality be incorporated into software engineering to address issues of bias, exclusion, and power dynamics, and ultimately create more ethical, inclusive, and effective software development?

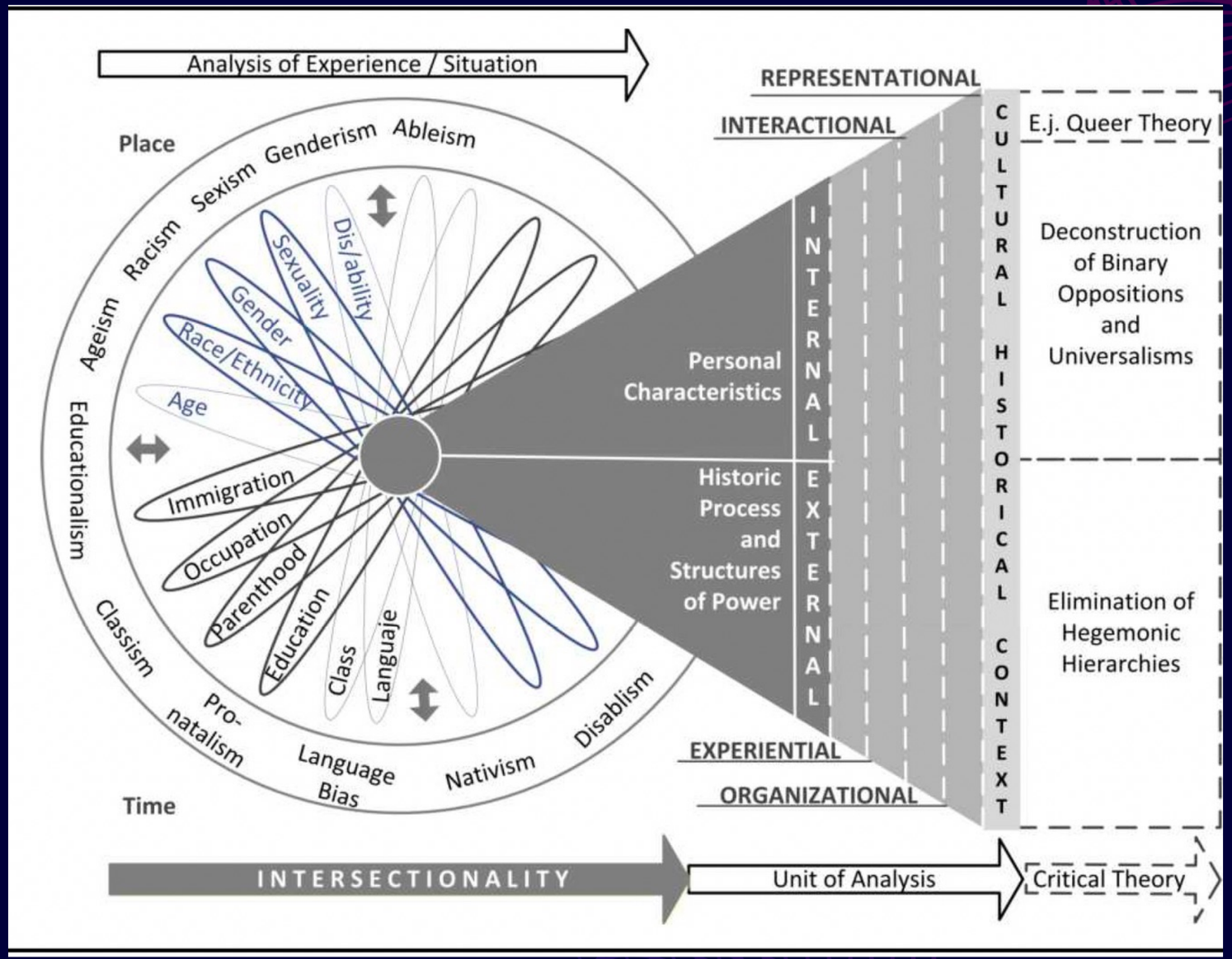
Creating more ethical, diversified, inclusive, and effective software development can also contribute to the broader goal of social justice, by addressing inequities and power dynamics that are embedded in the industry.

NEED OF INTERSECTIONAL FRAMEWORK

Intersectionality is important in software engineering because it recognizes that individuals have multiple identities and experiences that intersect to shape their perspectives and experiences.

An intersectional approach in software engineering can help ensure that software products are developed with a broader understanding of the diverse needs and experiences of users, leading to more inclusive and equitable outcomes. It can also help create a more diverse and inclusive workplace culture within software engineering organizations.

CONCEPTUAL FRAMEWORK



FIRST LEVEL - AWARNESS

The first level of the framework highlights the importance of recognizing and addressing intersectionality in software engineering to create more inclusive and equitable outcomes for users and within organizations.

Surrounding the intersection point – grey circle – 11 identities that an individual might hold.

Blue ellipses for personal characteristics –
By reviewing the SE literature, we identify gender, race/ethnicity, sexuality, dis/ability, and age

Black ellipses for external characteristics –
immigration, occupation, parenthood, education, socialclass and language.

Around the social identities, one can see the interlocking systems of oppression, e.g. genderism, sexism, and racism.

SECOND LEVEL - ANALYSIS

The framework provides a holistic approach to considering intersectional perspectives in software engineering, taking into account the multiple dimensions that shape users' experiences and the impact of technology on society.

The framework consists of four dimensions:

- **Identity** - This dimension recognizes that individuals have multiple intersecting identities that shape their perspectives and experiences.
- **Experience** - This dimension recognizes that individuals have diverse experiences that shape their perspectives and expectations of technology.
- **Context** - This dimension recognizes that the context in which software is developed and used can shape its impact on users.
- **Power** - This dimension recognizes that power dynamics can shape the development and use of software products.

THIRD LEVEL - ACTION

The third level represents the cultural-historical context that situates the first and second levels within a particular place and time.

This suggests that these multiple identities are socially constituted and influence on how social positions, divisions, and hierarchies are created and reified in society.

KEY ASPECTS OF RESEARCH DESIGN

The research design of this paper is primarily focused on the synthesis of existing literature and the development of a conceptual framework, rather than on empirical research or data collection.

The diversity crisis is not just about gender and race but includes other social identities that are underrepresented in the SE industry. Homogenous teams with similar worldviews may overlook design flaws for certain communities. Therefore, an intersectional approach that considers multiple dimensions of identity, experience, context, and power can help address bias in software systems and workforce diversity simultaneously.

This framework will encourage more work in this area and promote inclusivity, accessibility, and equity in the development and use of technology.

PERSONAL THOUGHTS ON PAPER

The authors' framework challenges the SE community to reflect on their practices and adopt an intersectional lens to address existing structures of inequality in society.

This can help to promote fairness, inclusivity, and social justice in the development and use of technology.

Overall, this paper adds to the growing body of literature on ethics in software engineering, emphasizing the importance of diversity, equity, and inclusion in creating ethical software products.

It provides a valuable framework for software engineers to reflect on their practices and promote social justice in the development and use of technology.

FUTURE SCOPE

Upon adopting this framework, Future research could involve identifying additional components or strategies for promoting diversity and inclusion in software engineering.

As fields like Artificial Intelligence and data science are becoming increasingly important in society, it is critical to ensure that they are developed in a way that is equitable and inclusive.

THANK YOU

Presented By
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