

Responsible Software Engineering

Jim Buckley, Luigina Ciolfi, Conor Linehan, John McCarthy, Clare McInerney, Bashar Nuseibeh, Irum Rauf, Sarah Robinson

1 MOTIVATION:

- **Software shapes lives** across domains such as health, finance, civil and social interactions
- Unfortunately, **public trust** in software has been eroded by evidence of corporations prioritizing profits over the common good.
- **Sociotechnical systems** subtly shape our (sense of) security, trust, and comfort in decision-making and actions.
- This research's **experience-centred design** approach prioritizes representing & enhancing **lived experiences**, with software serving as a support rather than a constraint.

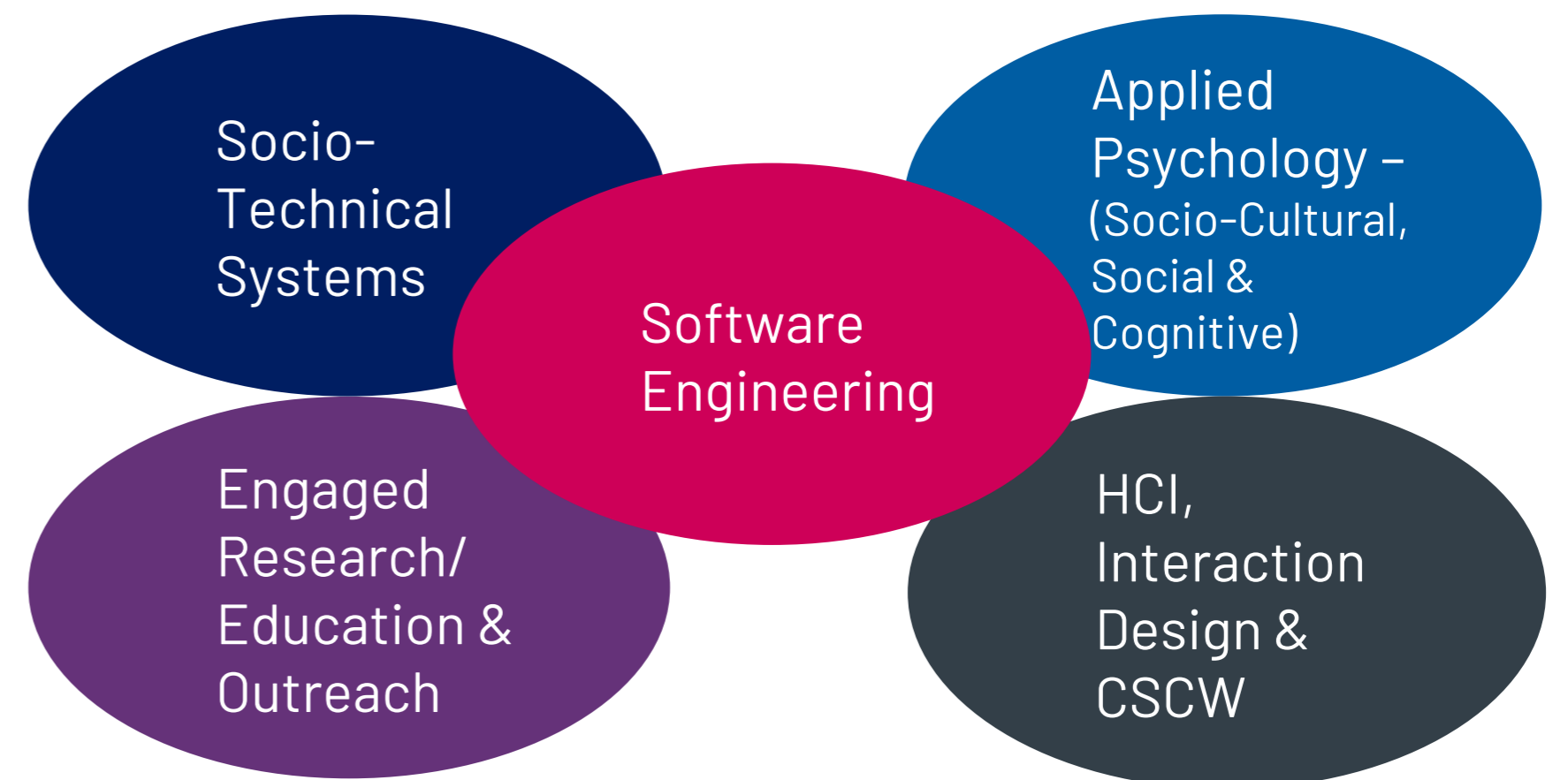
RESEARCH CHALLENGES:

- To develop understanding (s) of **Reflexively Responsible Software Engineering**
- To understand Responsible Software Engineering as an **embedded socio-technical practice**
- To derive, develop & evaluate tools & practices for **experiential practice-based** understanding of Responsible Software Engineering
- To specify the **education needed for citizens** to be able to act knowledgeably in the modern IT society

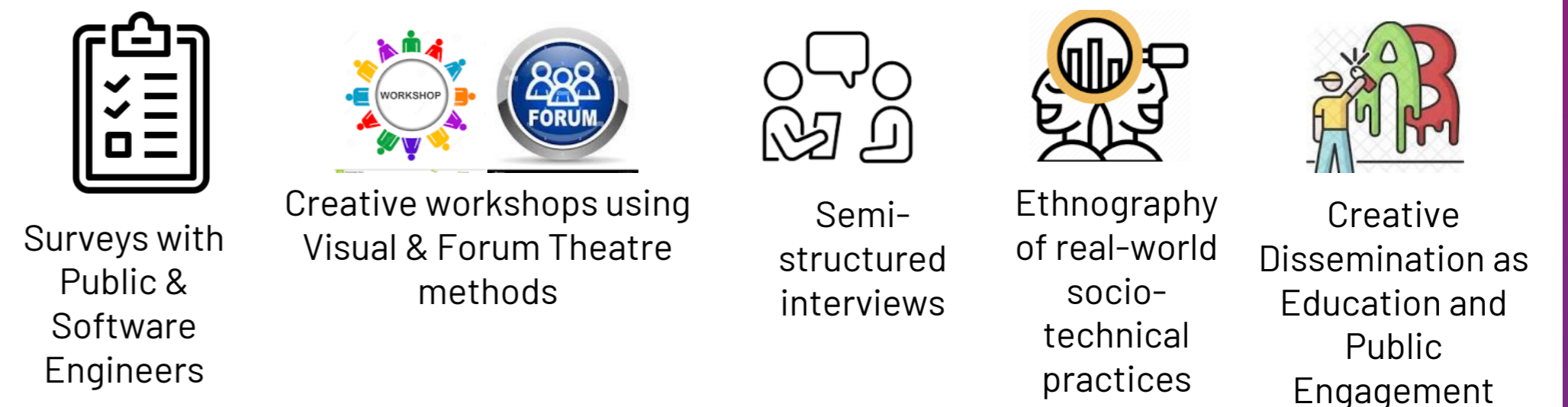
2 PERSPECTIVES AND METHODS:

An Interdisciplinary experience-centred design approach

Our team comprises researchers from diverse disciplines.



Our Methods include (but are not limited to):



3 WORK IN PROGRESS:

Conceptual Work

- We've coined "Infrastructural Injustice" for RSE, inspired by Susan Leigh Star & Iris Marion Young's work.
- Infrastructural Injustice arises from diverse actors pursuing their specific interests often within accepted norms (Young, 2011, p. 54).

Empirical Work to assess the validity of Infrastructural Justice as a perspective

- Survey research with public & software engineers
- Semi-structured interviews with software engineers
- Forum & Image Theatre as a form of Education & Public Engagement

Applications of Infrastructural Justice Work

- Creative workshops with public & software engineers
- Ethnographic study of RSE practices in software industry and research.
- Development of a tool-kit to support RSE
- Design Challenge Workshops
- Forum Theatre for public engagement & requirements engineering

4 TAKE-AWAYS:

- **Feeling infrastructurally powerless** can impact public actions to address ethical concerns
- Finding **infrastructural means to support ethical action** is important
- **Making the visible the invisible** concerns that people have, and how to address them can be achieved using Forum Theatre

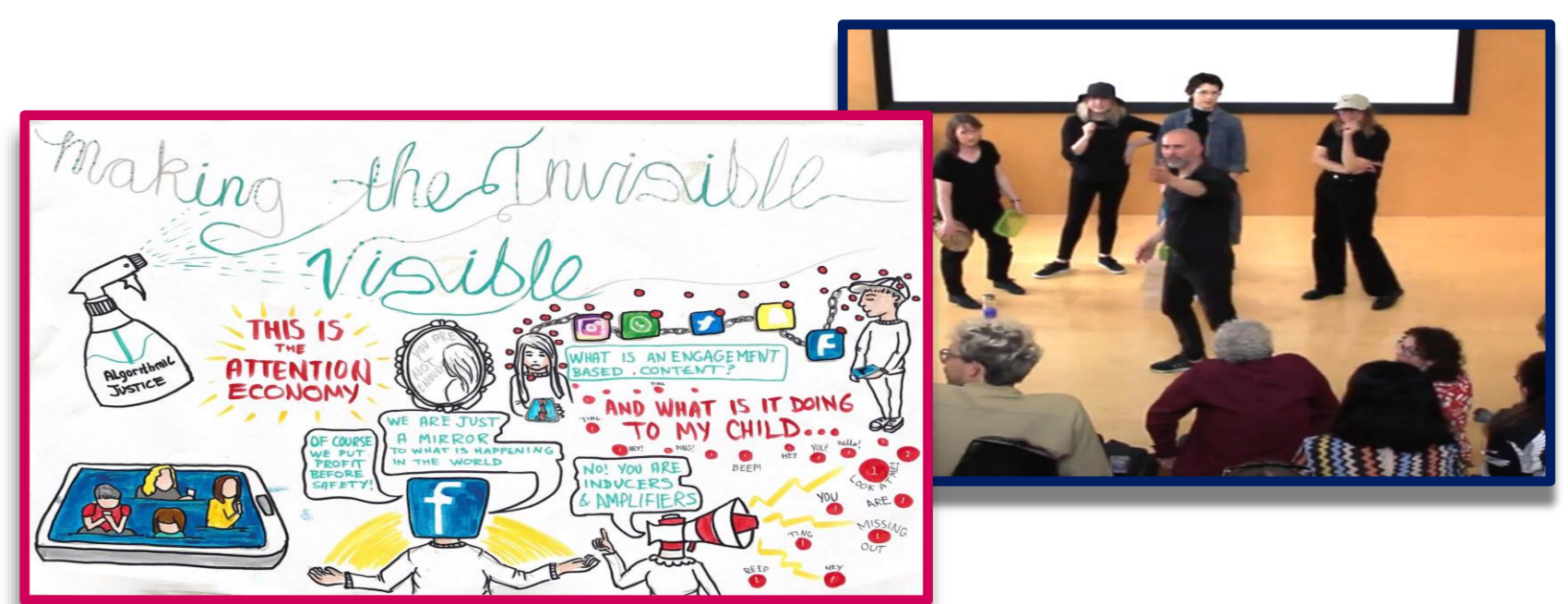


Figure 1 & 2 : Graphic harvest of Form Theatre by MTU's Creativity & Change, & Forum Theatre exploring Algorithmic Justice

- **Freelance security developers** practices around security are impacted by freelance developer platforms, indicating the importance of infrastructural practices for cybersecurity

HOST INSTITUTION



PARTNER INSTITUTIONS



FUNDED BY:

