

# Focusing on the Human Factor in Cybersecurity

**Prof. Dr. Verena Zimmermann**  
GESS - Security, Privacy & Society





# Research Aims

The group "Security, Privacy and Society" conducts research at the **intersection of humans and technology** with a focus on human-computer interaction and the **human aspects of IT security and privacy**. Using **interdisciplinary approaches**, we aim to tackle current security-related challenges and to develop human-centered solutions.



# Research Areas



Human-Centered Security and Privacy Research



Human Factors in Interconnected Security- and Safety-Critical Systems

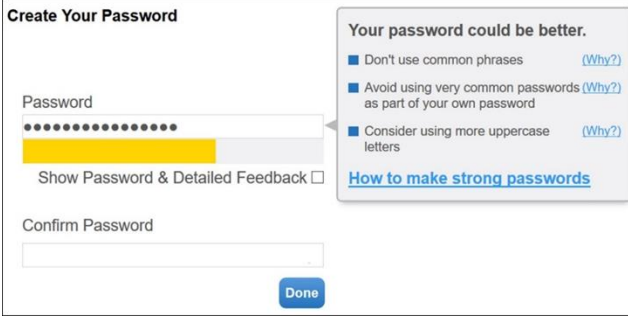


Leveraging Human Potential to Contribute to Cybersecurity

# Human-Centered Security and Privacy Research

## Exemplary Projects

- **Digital Nudging:** Analyse effectiveness and transparency of security/privacy nudges



The screenshot shows a 'Create Your Password' form. It includes a 'Password' field with a strength indicator (a yellow bar followed by a grey bar) and a 'Confirm Password' field. A 'Show Password & Detailed Feedback' checkbox is located below the password field. A blue 'Done' button is at the bottom right. A grey nudge box on the right side of the form is titled 'Your password could be better.' and contains three items:

- Don't use common phrases [\(Why?\)](#)
- Avoid using very common passwords as part of your own password [\(Why?\)](#)
- Consider using more uppercase letters [\(Why?\)](#)

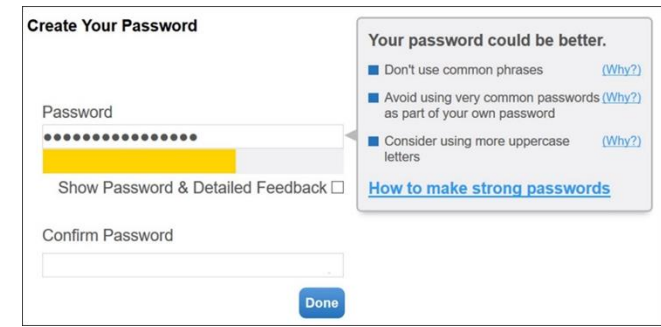
Below these items is a link: [How to make strong passwords](#)

(Zimmermann et al., 2021, TOCHI & 2022, Behav.Inf.Technol., Ur et al., 2017, CHI, Marky et al., 2020)

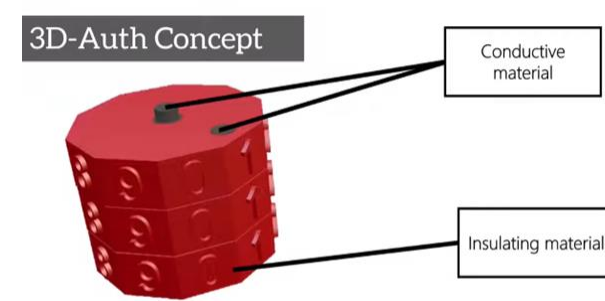
# Human-Centered Security and Privacy Research

## Exemplary Projects

- **Digital Nudging:** Analyse effectiveness and transparency of security/privacy nudges
- **Usable Authentication:** Design and evaluate usable authentication schemes, e.g. 2FA or Smart Home authentication



The screenshot shows a 'Create Your Password' form. It includes a 'Password' field with a strength indicator (a yellow bar) and a 'Confirm Password' field. A 'Show Password & Detailed Feedback' checkbox is present. A feedback box on the right titled 'Your password could be better.' lists three suggestions: 'Don't use common phrases', 'Avoid using very common passwords as part of your own password', and 'Consider using more uppercase letters'. Each suggestion has a '(Why?)' link. A 'How to make strong passwords' link is also provided. A 'Done' button is at the bottom right.



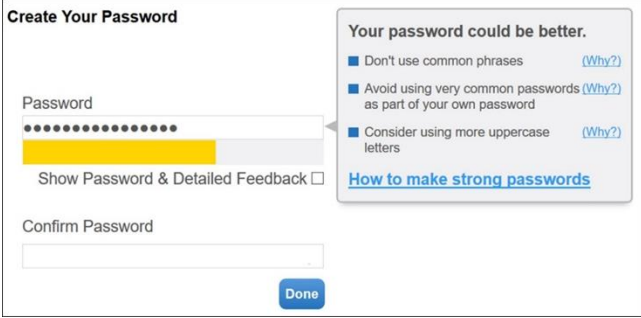
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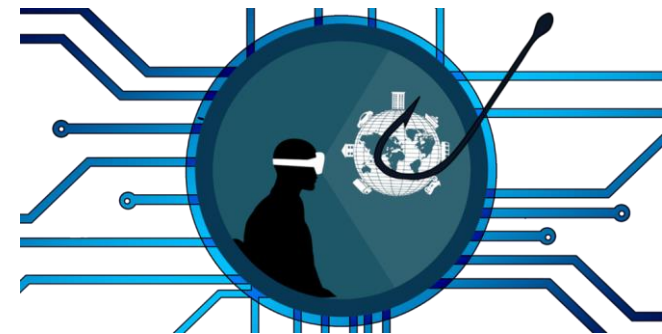
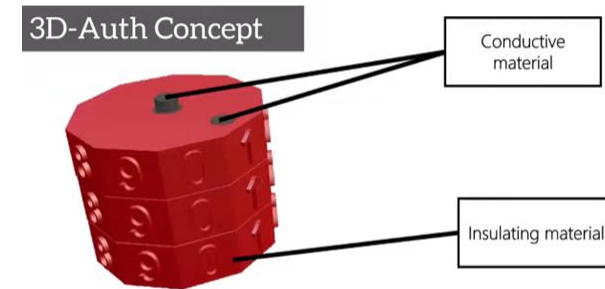
# Human-Centered Security and Privacy Research

## Exemplary Projects

- **Digital Nudging:** Analyse effectiveness and transparency of security/privacy nudges
- **Usable Authentication:** Design and evaluate usable authentication schemes, e.g. 2FA or Smart Home authentication
- **Phishing Detection:** Explore potential of AR based phishing training to counteract cognitive biases exploited by attackers



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# When Safety Meets Security

## Research Question

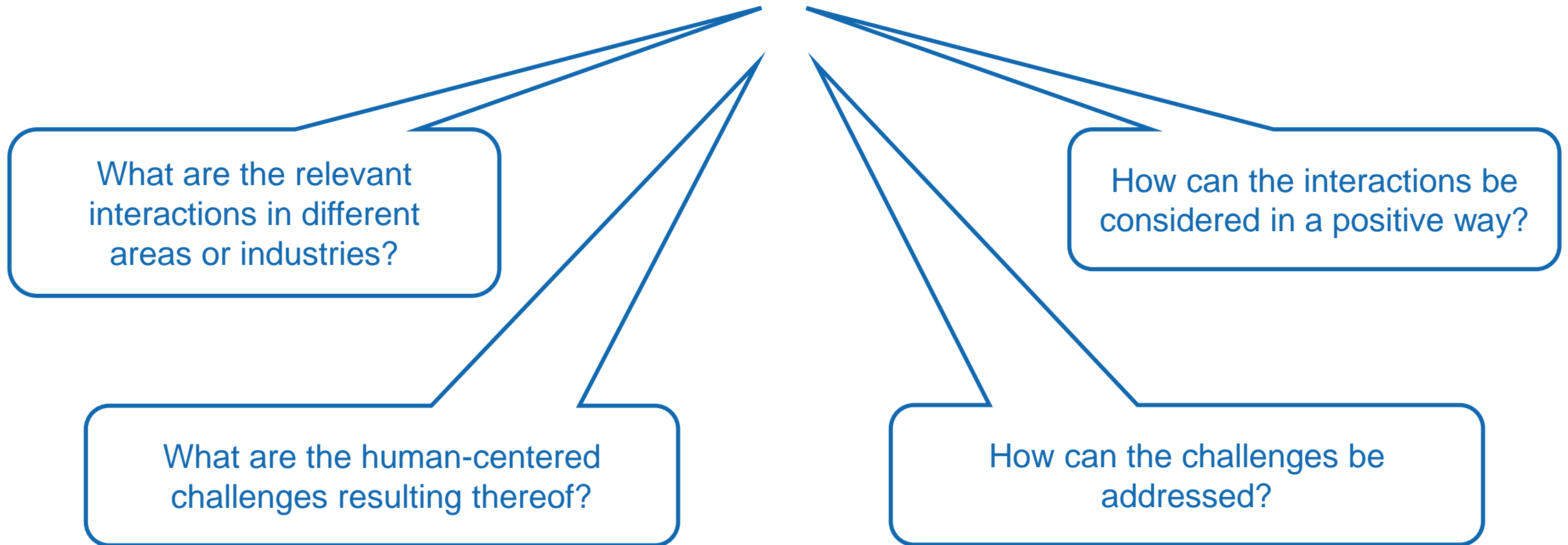
- Safety and Security as two disciplines with different traditions, methods, and departments
- Safety = Operational Safety, Freedom from (unintended) accidents or errors
- (IT) Security = Protection from (intended) cyberattacks
- Increase in digitalization increases interaction between safety and security



# When Safety Meets Security

## Research Question

**Safety** ↔ **Security**







**Thank you for your attention!**

**Professor Verena Zimmermann**  
verena.zimmermann@gess.ethz.ch

ETH Zurich  
Security, Privacy & Society  
STB G19  
Stampfenbachstrasse 69  
8006 Zürich, Switzerland