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“Human-Centric Privacy-Preserving Controls for Smart Home Devices”

The popularization of smart home devices has increased the privacy threats for end users. Despite the severity and the variety of risks associated with unintended access of sensitive data by unauthorized users, and subsequent potential for data misuse and exploitation, stakeholders are not yet well prepared to ensure users' privacy when developing novel technologies. More specifically, neither vendors are able to design privacy solutions in a user-centric way, nor end users are aware of best practices and safety measures to incorporate in their everyday lives. Additionally, privacy considerations from regulatory frameworks often lag behind when novel technologies reach consumers' homes. To inform the design of privacy-enhancing technologies, we employ a human-centered design approach focused on understanding, characterizing and formalizing users' concerns about privacy facilitating the design of privacy-preserving controls in order to foster user acceptance, adoption and sustained engagement.