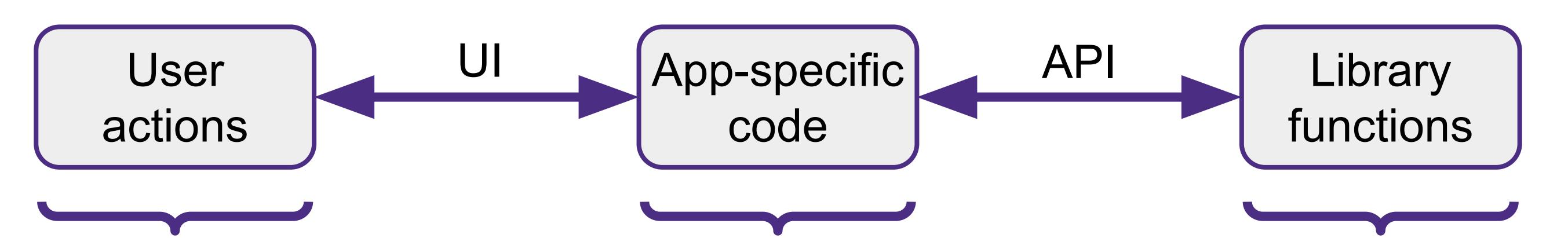
Secure Multi-User Content Sharing for Augmented Reality Applications

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User-to-user security & privacy risks occur here

Code mediating these risks must be present here Code easing developer burden should go here

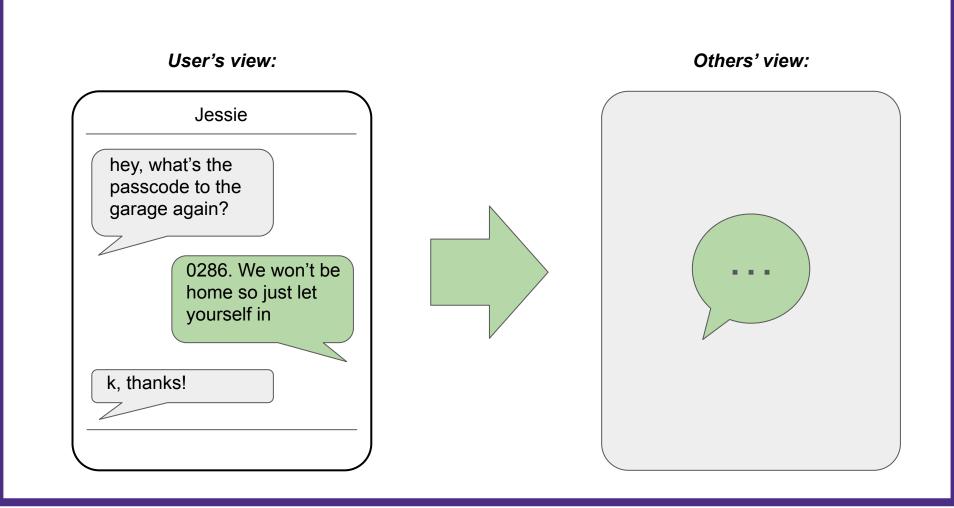
Problem Formulation

- Functionality goals
- Security goals
- Flexibility needs



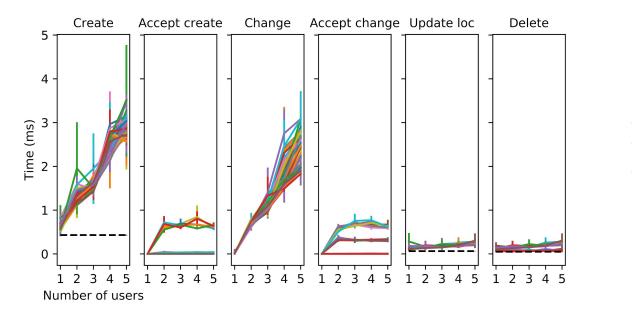
Design

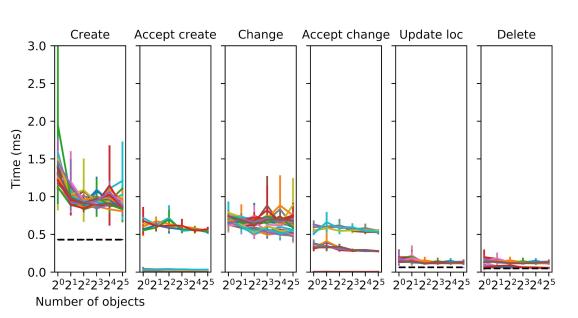
- Integrating virtual content into physical world
- Private content in shared world
- Ownership of physical-world spaces



Implementation: ShareAR

- Functionality: key app capabilities supported
- Compatibility: integrates with prior design recommendations
- Security: undesirable outcomes prevented
- Performance: scales with users and objects
- Code for HoloLens available publicly





K. Ruth, T. Kohno, and F. Roesner. Secure Multi-User Content Sharing for Augmented Reality Applications. USENIX Security Symposium, August 2019.

Thanks to:







