

Transmitting volumetric video via Media over QUIC to subscribers with contradicting spatial and temporal preferences

Felicián Németh, István Pelle, Tamás Lévai

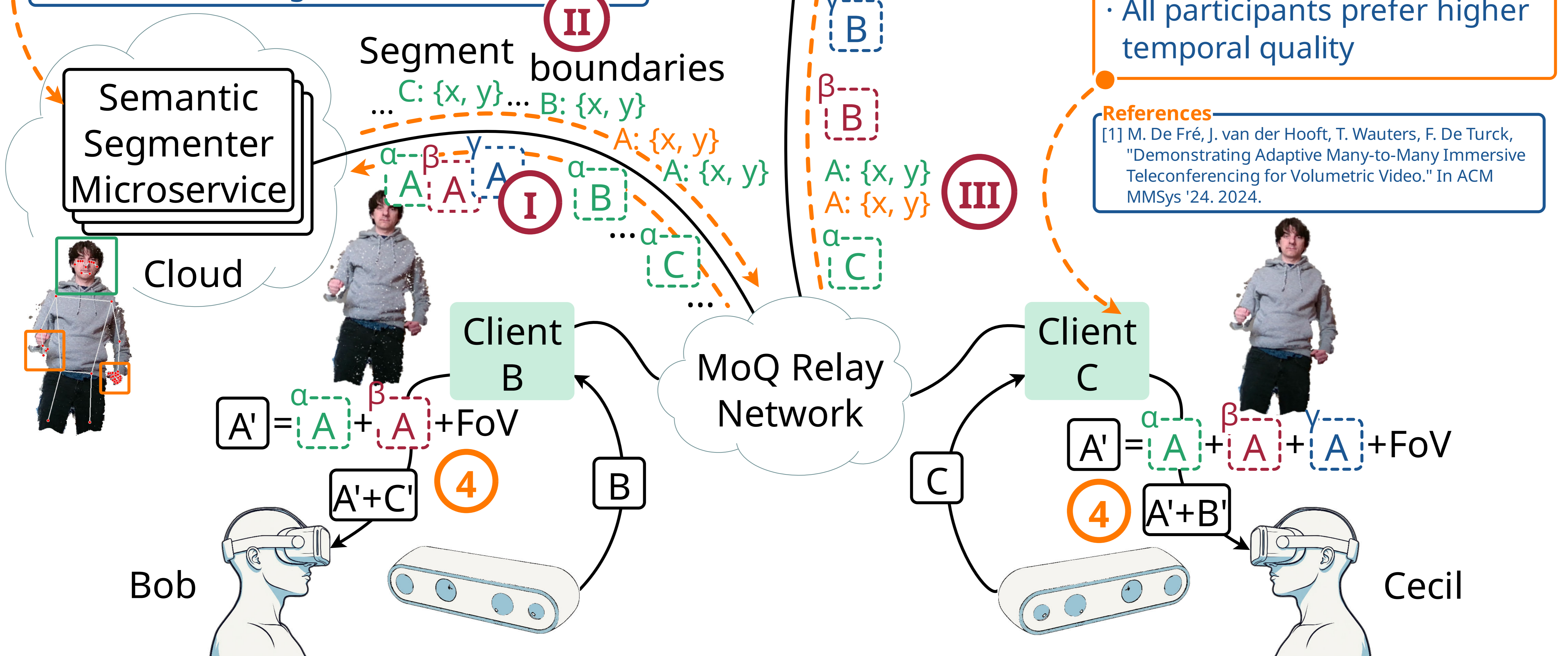
HUN-REN-BME Cloud Applications and Information Systems Research Groups,
Budapest University of Technology and Economics

Motivation & Concept

- Demands of real-time volumetric video challenge traditional transmission methods
- Use Media over QUIC (MoQ) in an immersive teleconferencing system^[1] to enable a simpler architecture leveraging QUIC compared to WebRTC
- Organize point cloud video into layers, bandwidth-limited users receive only a subset of data without the need for explicit bandwidth measurement

- Capture point cloud (PC) frames with stereo camera
- Split into α , β , γ layers of varying detail and information level based on semantic information gained at steps I - III

- Subscribe to every layer of every client
- Prefer higher spatial quality for improved body part detection
- Use novel LINKED_TRACK extension to join groups of different tracks
- Assemble incoming layers, convert to 2D
- Detect face and hands using MediaPipe
- Publish bounding box coordinates



References

- [1] M. De Fré, J. van der Hooft, T. Wauters, F. De Turck, "Demonstrating Adaptive Many-to-Many Immersive Teleconferencing for Volumetric Video." In ACM MMSys '24. 2024.

