Real-Time Visual Tracking and Episodic Memory by Face Recognition

**Purpose**
- Our goal is wearable visual systems/applications/interfaces using computer vision techniques (Weavy).
- We are developing new wearable computing environments for Weavy based on functionally-distributed architectures (Wyvern).
- We propose an autonomous and context-aware wearable assistant using **Wearable Active Camera (WAC)** and LifeMinder (Suzuki and Doi, CHI2001).
- We developed an episodic memory application based on
  - Real-time visual tracking by **WAC**,
  - context-aware UI by using the LifeMinder.

**Experimental results**

![Distribution of samples.](image1)

![Errors in tracking.](image2)

**Performance**
- Throughputs against the number of samples.
- Delays of **WAC** control.

**Results**
- **The LifeMinder** is a wearable healthcare assistant proposed by Suzuki et al. (CHI2001).
- **The WAC** finds and tracks people around the wearer.
- **WAC** is a wearable camera with face recognition engine.
- **WAC** tracks the person, and the episode is presented if it is previously stored in the database.
- **The LifeMinder** has accelerometers for two axes, which are set to match the display plane of the PDA.
- The wearer's arm gesture is recognized by the direction of gravitational acceleration.