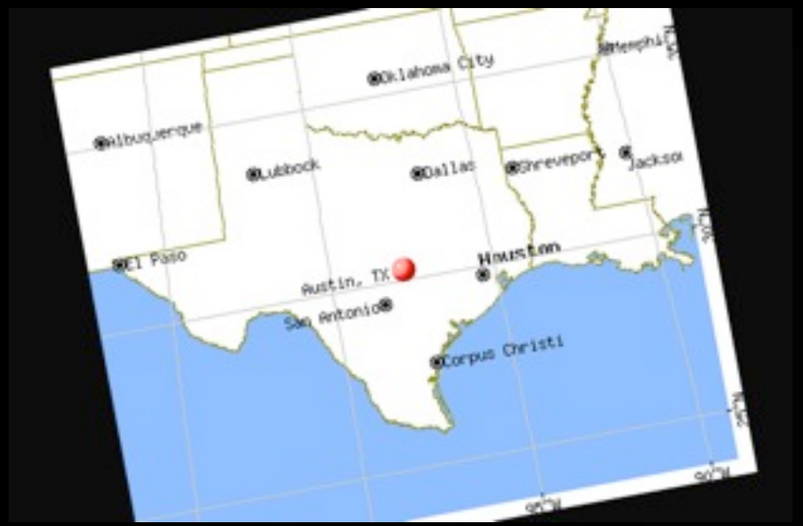
CHI.2012

CONFERENCE ON HUMAN FACTORS IN COMPUTING SYSTEMS

THE EXPERIENCE

AUSTIN - TEXAS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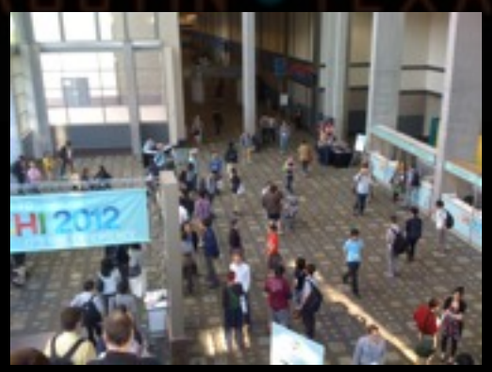

HI 2012

PAPERS 1

Curves & Mirages:
Gestures & Interaction with Nonplanar Surfaces

1 - **LightGuide**
Projected Visualizations for Hand Movement Guidance

2 - **Understanding Flicking on Curved Surfaces**

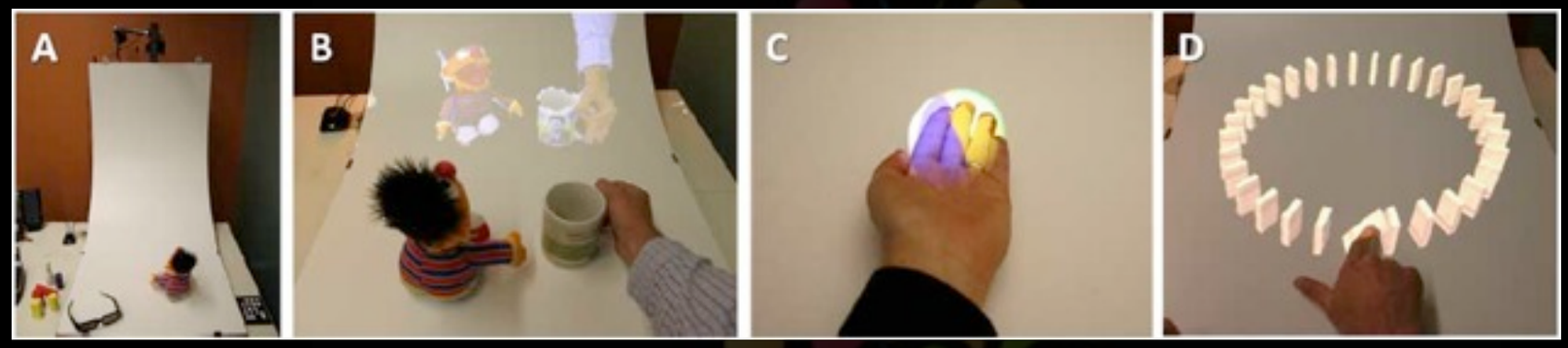
3 - **MirageTable**
Freehand Interaction on a Projected Augmented Reality Tabletop

4 - **How Screen Transitions Influence Touch and Pointer Interaction Across Angled Display Arrangements**

PAPERS I

MirageTable

Freehand Interaction on a Projected Augmented Reality Tabletop



Instrumented with a single depth camera, a stereoscopic projector, and a curved screen, MirageTable is an interactive system designed to merge real and virtual worlds into a single spatially registered experience on top of a table.

PAPERS II

Brain & Body

1 - **Touché**
Enhancing Touch Interaction on Humans, Screens, Liquids, and Everyday Objects

2 - **Detecting Error-Related Negativity for Interaction Design**

3 - **Implanted User Interfaces**

4 - **EEG Analysis of Implicit Human Visual Perception**

PAPERS II

Touché

Enhancing Touch Interaction on Humans, Screens, Liquids, and Everyday Objects

Touché proposes a novel Swept Frequency Capacitive Sensing technique that can not only detect a touch event, but also recognize complex configurations of the human hands and body. Such contextual information significantly enhances touch interaction in a broad range of applications, from conventional touchscreens to unique contexts and materials.

PAPERS III

Hot Moves:
Shape-changing & Thermal Interfaces

1 - **"Baby It's Cold Outside"**
The Influence of Ambient Temperature and Humidity on Thermal Feedback

2 - **PINOKY**
A Ring That Animates Your Plush Toys

3 - **Shape-Changing Interfaces**
A Review of the Design Space and Open Research Questions

4 - **MimicTile**
A Variable Stiffness Deformable User Interface for Mobile Devices

5 - **Animating Paper Using Shape Memory Alloys**

PAPERS III

PINOKY

A Ring That Animates Your Plush Toys

PINOKY is a wireless ring-like device that can be externally attached to any plush toy as an accessory that animates the toy by moving its limbs.

PAPERS IV

Pen + Touch

1 - Natural Use Profiles for the Pen: An Empirical Exploration of Pressure, Tilt, and Azimuth

2 - A-Coord Input: Coordinating Auxiliary Input Streams for Augmenting Contextual Pen-Based Interactions

3 - **Personalized Input**

Improving Ten-Finger Touchscreen Typing Through Automatic Adaptation

4 - Bimanual Marking Menu for Near Surface Interactions

PAPERS V

Sensory Interaction Modalities

1 - **Humantenna**

Using the Body as an Antenna for Real-Time Whole-Body Interaction

2 - **SoundWave**

Using the Doppler Effect to Sense Gestures

3 - Your Phone or Mine?

Fusing Body, Touch and Device Sensing for Multi-User Device-Display Interaction

4 - IllumiShare

Sharing Any Surface

5 - Rock-Paper-Fibers

Bringing Physical Affordance to Mobile Touch Devices

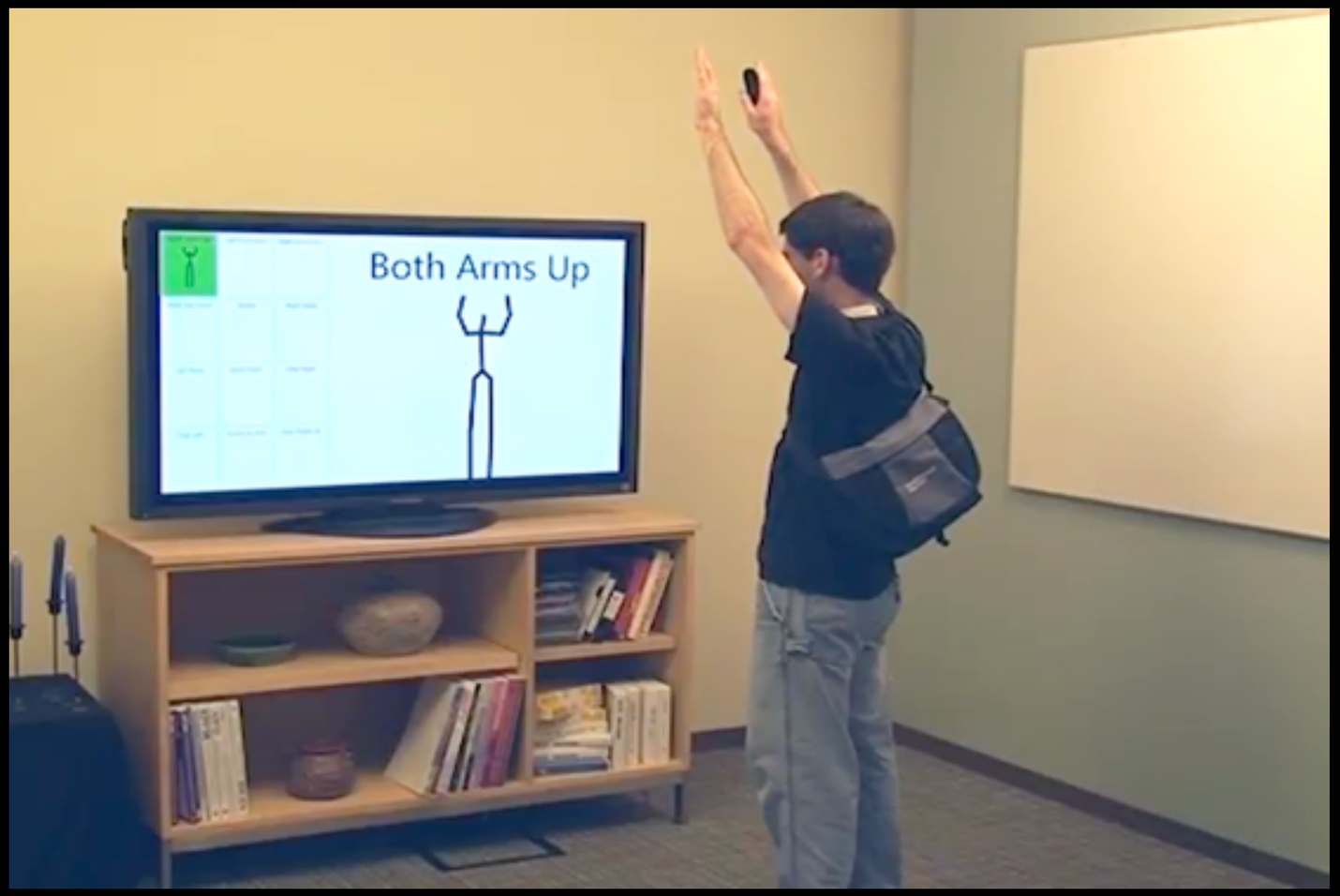
6 - Shake'n'Sense

Reducing Interference for Overlapping Structured Light Depth Cameras

PAPERS V

Humantenna

Using the Body as an Antenna for Real-Time Whole-Body Interaction

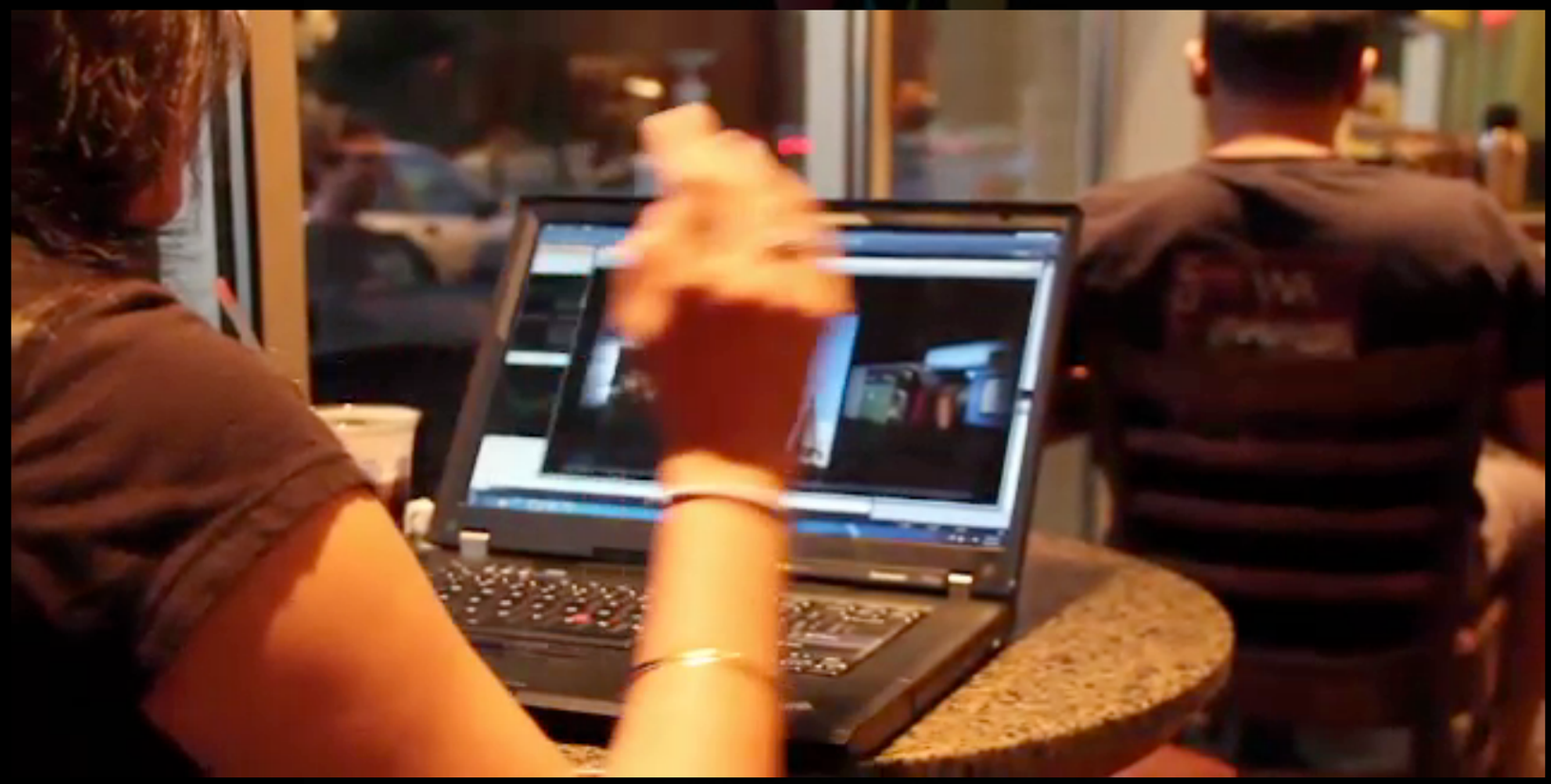


Real-time interactive system which allows a user to interact with a computer using whole-body gestures

PAPERS V

SoundWave

Using the Doppler Effect to Sense Gestures

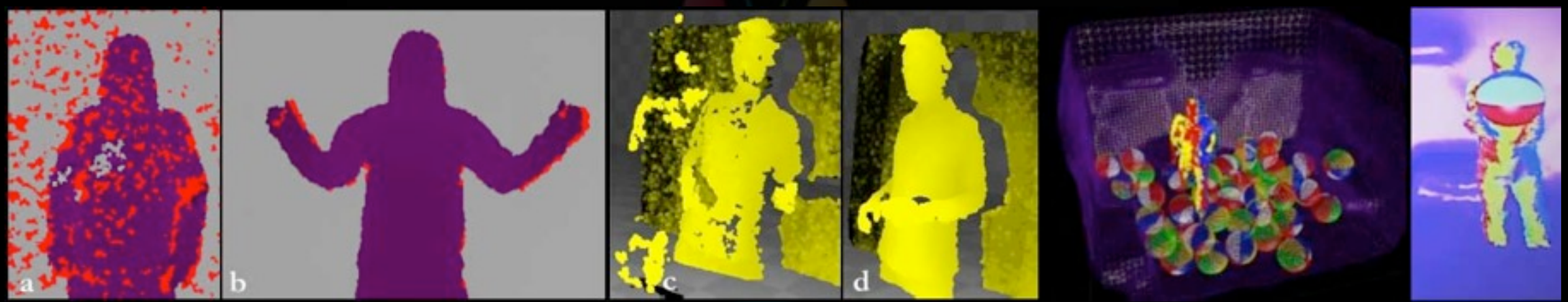


SoundWave, a technique that leverages the speaker and microphone already embedded in most commodity devices to sense in-air gestures around the device.

PAPERS V

Shake’n’Sense

Reducing Interference for Overlapping Structured Light Depth Cameras



Novel yet simple mechanical technique for mitigating the interference when two or more Kinect cameras point at the same part of a physical scene. (a) Interference between overlapping structured light patterns from two regular Kinect cameras pointing at a person produces invalid and noisy depth pixels marked red. (b) the method reduces noise and invalid pixels in the depth map. (c) The resulting point-cloud shows significant artifacts without our technique. (d) Point-cloud with our technique applied. (e) Our technique can be used to create an entire instrumented room with multiple overlapping Kinect cameras. (f) Meshed output accumulated from multiple Kinects shows reduced interference between cameras (color-coding indicates data from different cameras).

PAPERS VI

Triple T: Touch, Tables, Tablets

1 - **Hand Occlusion on a Multi-Touch Tabletop**

2 - **BiTouch and BiPad**
Designing Bimanual Interaction for Hand-Held Tablets

3 - See Me, See You
A Lightweight Method for Discriminating User Touches on Tabletop Displays

4 - IllumiShare
Sharing Any Surface

5 - Rock-Paper-Fibers
Bringing Physical Affordance to Mobile Touch Devices

6 - Shake'n'Sense
Reducing Interference for Overlapping Structured Light Depth Cameras

PAPERS VII

Dimensions of Sensory Interaction

1 - ZeroTouch

An Optical Multi-Touch and Free-Air Interaction Architecture

2 - Enabling Concurrent Dual Views on Common LCDScreens

3 - Ultra-Tangibles

Creating Movable Tangible Objects on Interactive Tables

4 - CapStones and ZebraWidgets

Sensing Stacks of Building Blocks, Dials and Sliders on Capacitive Touch Screens

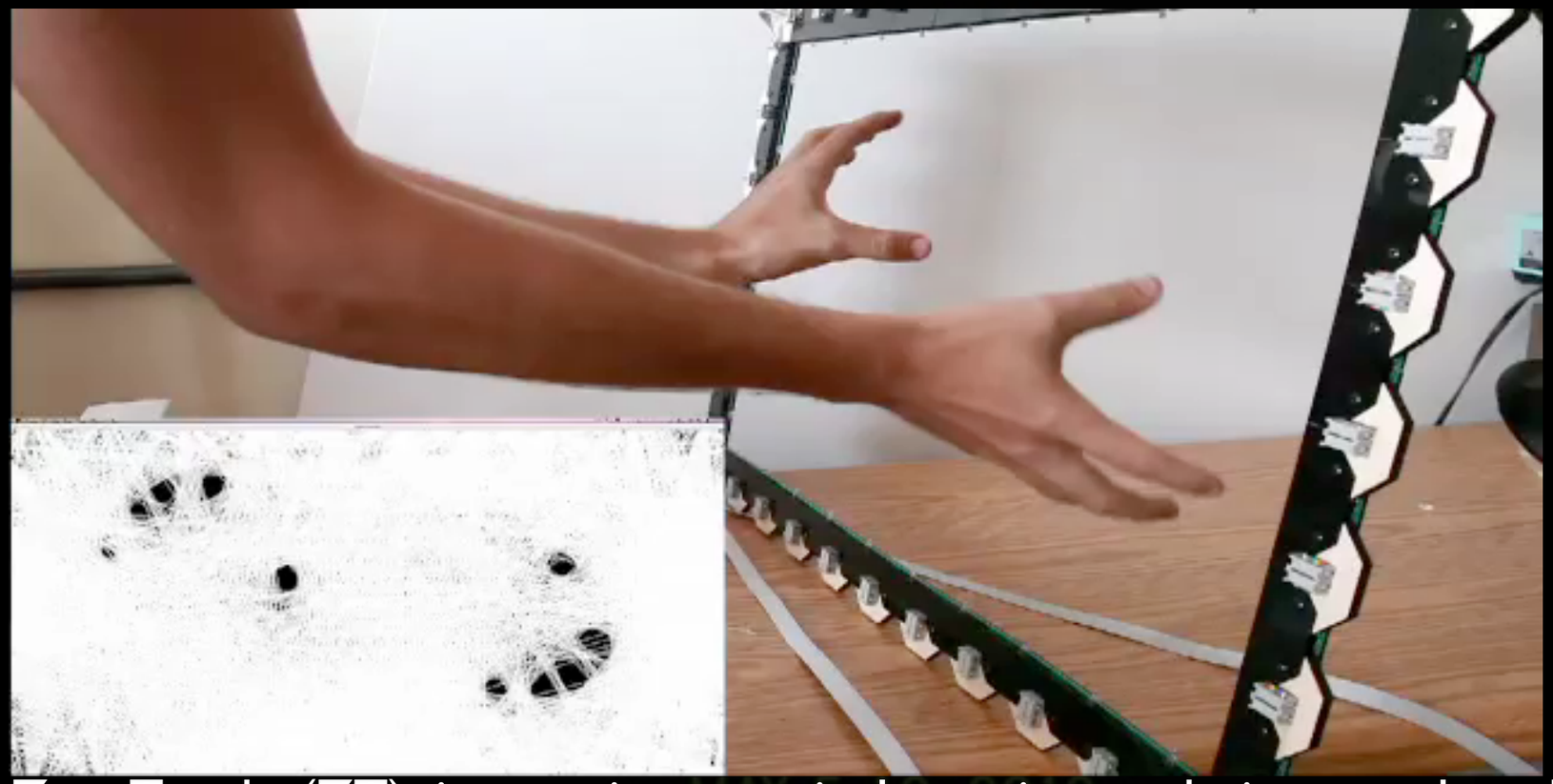
5 - Brainput

Enhancing Interactive Systems with Streaming fNIRS Brain Input

PAPERS VII

ZeroTouch

An Optical Multi-Touch and Free-Air Interaction Architecture



ZeroTouch (ZT) is a unique optical sensing technique and architecture that allows precision sensing of hands, fingers, and other objects within a constrained 2-dimensional plane.

POSTERS

THREE DAYS WITH TWO POSTER SESSIONS
TOP LEFT PICTURE WITH THE POSTER SHAPE YOUR BODY

DEMOS

THREE DAYS WITH DEMOS