

ACTIVE LEARNING CENTER:

Research Team: Orçun Kepez, PhD; Taner Arsan, PhD; Mehmet Aydın, PhD; Selin Üst, PhD.

Scientific Areas: *Design, Architecture, Information Technologies, Computer Science*

Vision, Mission, and Objectives

Vision: We advocate research-based design of learning environments through understanding of human behavior.

Mission: Our mission is marriage of art, design and sciences to design technologies, innovative services and spaces for better learning.

Objectives: We develop new technologies to better understand learning behavior that leads better learning outcomes.

Our Expertise

We are expert in understanding human movement in indoor environments through use of sensors. We describe, predict, and prescribe certain behaviors (social and other objects interactions, use of resources) through complex systems modeling.

Regular services we provide

Observation and analysis of observation data: We conduct observation by following different methodologies based on the need. This service can be traditional direct observation, camera based observation or sensor-based observation or hybrid (incorporating different observation methods at the same time)

Behavior Mapping and Spatial Analysis: We map locations of what we observe (students, teachers, furniture...etc.) and run spatial analysis using research software.

Image processing: We use image processing to provide services like head and gesture recognition when we use cameras for observation.

Sensor set-up (ibeacon, UWB) and software development: We provide custom design sensor set-up based on client's need and develop necessary software to enable client to have access and sense of the collected data.

Wearable technologies: We select the appropriate wearable technology for client's needs and incorporate wearable device data to the sensor data set to inform better decision making.

Design Thinking Methodology and Workshops, Interview, Survey Design & Analysis: In order to understand the need, the effectiveness of the system and software we design, we conduct semi-structured interviews that leads us to design surveys. We can conduct Design Thinking Workshops for collaborative decision making on goal setting, process and product (design of software, hardware, UX, services) design.

Mixed methods for field research: We offer employing mixed methods for field research to understand complex problems that client brings to table.

Dashboards for decision makers: We design dashboards for decision makers to monitor and evaluate their organizations.

Design Guidelines and Participatory Design and Planning: We develop research based design guidelines for organizations to plan and make physical changes in learning environment that can lead to better learning outcomes in students and better performance of teachers and staff. We can follow a participatory design strategy to design future learning environment /or plan remodeling of existing environments together with the organizations.

We apply our services into various contexts below:

- malls (shopping malls of different size)
- workplace (office space, co-working areas)
- housing (home, residential complex, dorms)
- care environments (hospitals, nursing homes, assisted living)
- informal learning environments (eg. museums and exhibitions)
- airports and other transportation facilities
- hospitality (hotels and other env.)

Recent Successful Research Projects

(2017-2014 only collaborative projects are listed)

(Name of the Project, *Team*, Grant Source, Start and End Dates. Funding Total.)

Behavior Mapping with High Accuracy Indoor Positioning using Ultra Wide Band (UWB) Sensors, (*PI: Taner Arsan, Researchers: Orçun Kepez, Mehmet Aydın, Selin Tunali*); KHas U. Seed Grant. 15.04.17-15.04.18. **€ 12,000.**

Steelcase Active Learning Center, (*PI: Orçun Kepez, Researchers: Taner Arsan, Selin Üst, Mehmet Aydın*) Steelcase Education- Europe & Klassis, 08.15.2015-08.31.2017. **€ 24,792**

Polyvision and Kadir Has University Research Partnership on Use of Duo Walls, (*PI: Orçun Kepez, Researchers: Taner Arsan, Selin Üst, Mehmet Aydın*) Polyvision (Belgium) & Emko (Turkey – Local Industry Partner), 11.15.2015-08.31.2017. **€ 23,175**

FabLab Istanbul, (*PI: Sirin Tekinay, Researchers: Taner Arsan, Orçun Kepez, Zuhul Ulusoy*), Istanbul Development Agency, 08.15.2013-05.15.2014. **\$199.466** (converted from Turkish currency at the time)

Topics of Interest under H2020:

DT-ICT-01-2019 – Smart Anything Everywhere
ECSEL Joint Undertaking.

Keywords:

Learning environments & technologies
Informal learning environments

Active Learning
Design
Software & Hardware Development
Circuit Design
Information Technologies
Wearable Devices
Complex Systems and Network Science

Our Role as a Partner

We help organizations to learn from their practice and make innovative decisions based on insights. We collect and analyze behavioral data from learning environments through sensors and observation. We develop real-world scenarios to test new technologies. We provide design consultancy for new technologies and learning environments through design thinking.

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