

UXINSIGHTS :: New Worker Empowerment

Providing User Experience Insights into Work Environments



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MOTIVATION & GOALS

- In industrial environments (e.g., photovoltaic system setup), **technicians interact** with multiple **UI layers**, apps, devices, and tools under **time pressure**.
- The integration of **eye-tracking** and **physiological data** aims to understand **user stress, focus, and overload**, and thus be able to provide support with **feedback and instructions** for both users and developers.
- The goal of this project is to conduct **repeatable and quantifiable UX analysis** in work environments to achieve long-term, **lasting product improvements**. This makes the product improvement process **cognitive, human-centered, and sustainable**.

Project FactBox

Project Name UXINSIGHTS
Project ID MFP P.1
Duration 12 Months

Area 1
Area Perception

Project Lead
Dr. Georgios Sopidis

APPROACH

- Study Setup:** Simulate technician workflows and define UI tasks (e.g., setup flows) across multiple screens/devices.
- Multimodal Sensing:** i) Gaze tracking (smart glasses)
ii) Physiological sensing (e.g., HR, IBI, GSR via wrist worn trackers)
iii) Click and interaction logging.
- Synchronized Data Mapping:** Align gaze, click, and physio data using time series information and map specific UI screens and AOIs.
- Insight Extraction:** Heatmaps and fixation durations, Missed clicks and hesitation detection, Stress/load overlays from biosignals.

CONTRIBUTION

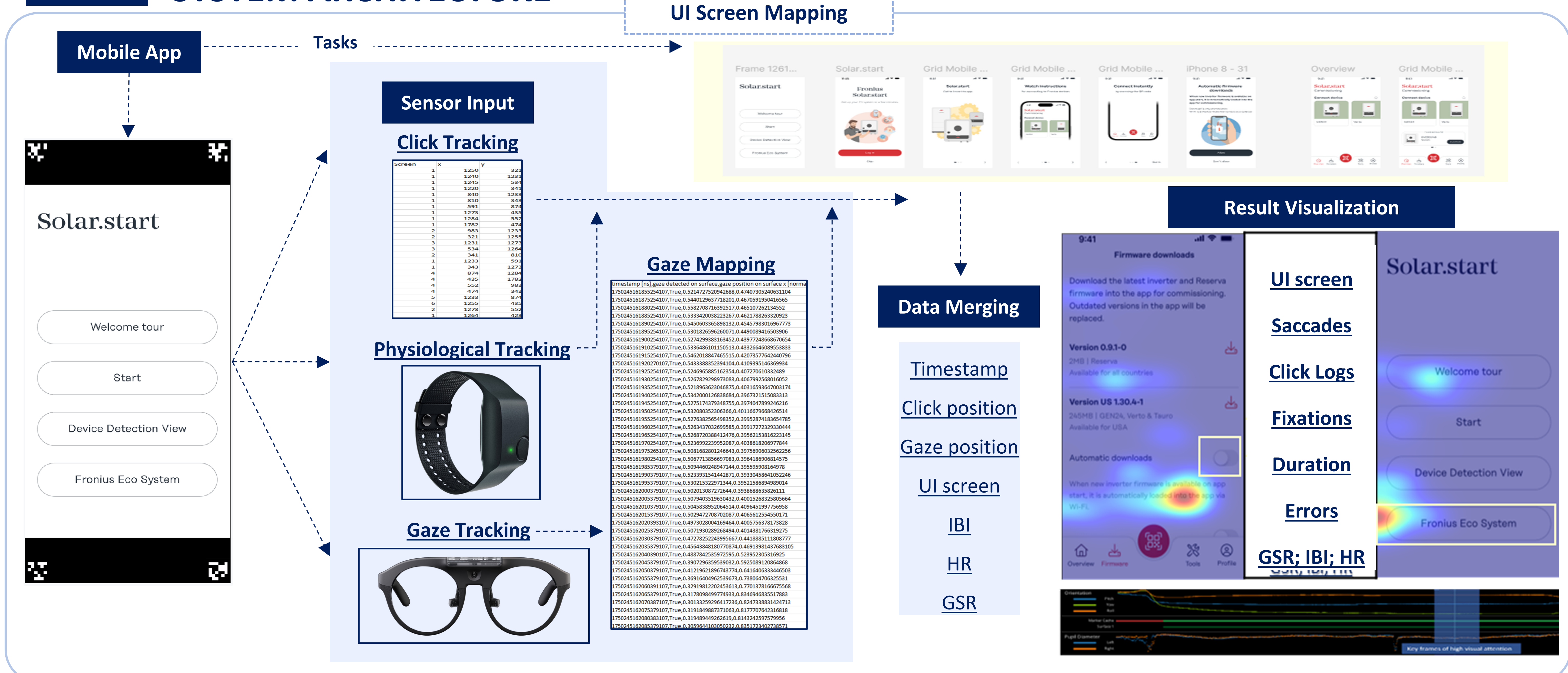
Scientific contribution

Heterogeneous data streams can be merged in a user-centered UX model, which constitutes a repeatable, sensor-based UX analysis pipeline combining eye-tracking, physiological metrics, and click logs.

Economic contribution

Assisting industrial stakeholders to standardize UI/UX across multiple devices (mobile, tablet, embedded HMI), reducing installation errors and cognitive load, with a digital assessment and analyzing the entire cross-device user experience.

SYSTEM ARCHITECTURE



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