FinEst Centre
for Smart Cities

SMART CITY CHALLENGE 2025
ConciergeAI

Solution Idea Title ConciergeAI - Find your next thing!

Planned pilot project duration – 24 months

Main contact/-s – Viktorija Prilenska, viktorija.ptilenska@taltech.ee, +37126340187, FinEst Centre, TalTech

1. Which urban challenge or problem are you planning to provide a solution to?

Digital Citizen 360 (Bagcilar, Istanbul, Turkey) and Campuses Fostering Creative Economy (TalTech Campus, Tallinn, Estonia) envision AI-driven systems that use detailed user input or behavioral data to generate personalized, proactive recommendations that enhance everyday life. Each seeks to replace top-down, generic approaches with tailored guidance that strengthens social ties, improves well-being, and increases access to opportunities—whether those opportunities are cultural, educational, or spatial. In both Tallinn's campus context and Bağcılar's municipal context, the goal is a human-centered, data-informed model that enables more responsive environments and helps people connect with the services, spaces, and communities that best fit their needs. Importantly, the concept can begin at the campus scale—where user groups are concentrated and easy to engage—and then be expanded outward to neighborhoods or the entire city as the system matures.

2. The solution you are proposing

We propose an AI-powered conversational module that delivers personalized, timely information about services, spaces, and activities—while collecting instant user feedback—so that the right opportunities reach the right people without the need to search multiple websites or newsletters. The application will be driven by a conversational multi-language AI assistant and a backend machine learning data analysis tool, providing insights on the newly collected or already existing data. Available information will be gathered from campus or municipalities databases and digital infrastructures (e.g., as mentioned in Bagcilar, Istanbul, Turkey proposed challenge). The two AI modules (the front-end and back-end) will work jointly in providing the end-users a place, interface, to express preferences and needs in form of conversational prompts and answer to the AI agent questions, and a personal concierge, or assistant, scraping data from the existing sources and providing the best tailored suggestions for activities, available rooms, spaces, events, services and suggestions and how to access them. At the same time, the system will suggest opportunities that fall outside a user's usual interests, making new experiences more visible and accessible, and fostering cross-disciplinary, inclusive, and multilayered exploration of what is happening across the campus or neighborhood.

The software also captures quick, on-the-go user feedback (e.g. spontaneous comments and needs, state of wellbeing related to spaces, and ratings of events and services)—submitted in specific moments such as while waiting for a bus or during lunch—allowing users to share their thoughts immediately when they arise and in the actual places, rather than through long surveys or roundtables. The application collects other anonymized data—such as time, location, use of spaces, people density, and movements —integrating these with users' comments and feedback providing an overview of how the locations are inhabited and experienced. The software integrates directly into existing campus or city applications, eliminating the need, at least initially, for users to download a new app.

The solution tackles two fundamental problems: opportunities, services, and spaces often fail to reach the right people at the right moment, while cities and campuses struggle with limited, fragmented, and unrepresentative community feedback. By

European Union
European Regional
Development Fund
Investing
in your future
Republic of Estonia
Ministry of Education
and Research
Republic of Estonia
Ministry of Economic Affairs
and Communications
FORUM
VIRIUM
HELSINKI
TAL
TECH
A!
Aalto University

providing personalized recommendations and simplifying discovery, the module cuts through information overload and empowers users to be more proactive, connected, and engaged. At the same time, it overcomes the "usual suspects" problem by collecting insight from the broader silent majority through quick, lightweight interactions. The aggregated data then offers campuses and cities a dynamic understanding of user needs, sentiment about specific places, wellbeing, heatmaps of used and unused spaces and recurring challenges related to public areas—helping them improve services, adjust activities, and make evidence-based spatial or operational interventions, fostering small-scale pop-up strategies and structured long-term plans. As already mentioned, the module becomes both a digital concierge for users and a continuous, real-time feedback and decision-support system for campuses and municipalities, enabling more responsive, human-centered urban environments. Altogether the potential lies in connecting people interests and feedback, space availability, informal and organized meeting points where discussions can happen on different levels, promoting creative solutions and opportunities between all stakeholders (citizens, workers, students, researchers etc.)

3. Innovation and piloting of your pilot solution.

Existing civic-engagement and crowdsourcing platforms—such as SeeClickFix (https://seeclickfix.com/), PublicStuff (https://www.publicstuff.com/), and Maptionnaire (https://www.maptionnaire.com/)—allow cities and campuses to gather user input, run consultations, and collect feedback on services or spaces. These tools help institutions communicate more effectively and receive structured reports or survey responses from residents. However, they mostly rely on form-based input, push general announcements, and offer limited personalization. Many other crowdsourcing apps have also struggled because they collected large volumes of unstructured feedback without the AI capabilities needed to analyze, summarize, or transform it into actionable insights.

Our solution overcomes these limitations by providing personalized, real-time recommendations and instant feedback loops through an AI-powered conversational interface integrated directly into existing campus or city apps. Instead of expecting users to search through websites or fill out long surveys, the app proactively suggests relevant activities, services, and spaces, and collects short, spontaneous feedback during everyday life within the campus or urban environment. This bridges the long-standing gap between data collection and real-world action: institutions receive high-quality insights from a much broader user base—including the silent majority—while users gain an effortless, tailored digital assistant that helps them navigate opportunities, places and events.

The innovation lies in combining personalized AI recommendations, conversational interaction, instant micro-feedback, and operational integrations (e.g., bookings, scheduling, spatial mapping) into a single software. Unlike other crowdsourcing tools, which produced slow and fragmented feedback loops, this solution continuously analyzes anonymized behavioral data and user sentiment to guide decision-making in real time. It creates a closed, dynamic loop: AI agent asks questions → users express interests → AI suggests opportunities → users act and give instant feedback → cities and campuses adjust services and spaces based on collected data and feedback. This fusion of conversational AI, proactive personalization, and real-time planning insight does not exist in current civic-tech solutions. Moreover, the visibility given to available spaces, meeting points, and non-conventional events, allows spontaneous organization and gatherings, supporting knowledge and cultural exchange.

Cities need three things to pilot the proposed solution: access to their existing digital platforms (such as a city or campus app), permission to use anonymized behavioral and geolocation data, and basic integration with their databases, activity, service, and space-management systems. They also need a small internal team—typically from IT, planning, or community engagement—to coordinate data access, monitor early results, and support adjustments.

Piloting can begin with a clearly defined area—such as one campus or one district—and run for a limited period (e.g., 8–12 weeks). During this phase, users interact with the conversational module, receive personalized recommendations, and provide quick feedback on services and spaces. At the same time, the city or campus receives visual insights showing user needs, common pain points, sentiment patterns, and suggested improvements. These insights can inform actual interventions—programming changes, service updates, or spatial modifications— and allow to measure impact. These

interventions do not need to happen in a structured top-down way, at least initially, but could be initiated as pop-up, temporary solutions which might respond to space usage information, trends on user preferences and needs. After demonstrating value at this small scale, the pilot can be expanded to additional neighborhoods, campuses, or citywide users.

Industrial Augmented and Virtual Reality Lab at Tallinn University of Technology Department of Mechanical and Industrial Engineering has proven capabilities in human computer interaction, interface design and user experience both adopting immersive technologies (XR headsets) and traditional desktop or handheld device-based interfaces. The laboratory has a cross disciplinary approach providing solutions in the fields of industry, healthcare, defence, and education. **Dr. Simone Pizzagalli**, current head of the lab, has a background in architectural design and urban planning, bottom up and participatory design solutions for the urban domain. **Dr. Viktorija Prilenska**, FinEst Centre, TalTech, has a background in architecture, urban planning and business administration. She has worked with civic engagement (Hupmobile Participatory Tools) and with developing and piloting urban innovations solutions (GreenTwins, Well-being score).

4. Expected impact of your pilot solution.

The solution can transform city environments into more responsive, permeable, inclusive, and efficiently used spaces by ensuring that activities, services, and facilities reach the right people at the right time. This increases participation in cultural, educational, and community programs, activates underused spaces, and improves resource allocation—supporting social sustainability. For cities, it provides real-time insights that help optimize planning, improve service delivery, and guide data-driven decisions. For citizens, personalized guidance and effortless feedback strengthen social connections, reduce information overload, and enhance overall well-being, citizens feeling of ownership and agency in their own environment, making the city easier, more enjoyable, and more meaningful to navigate.