INDUSTRIAL PHD POSITION - Multi network positioning algorithms and methods

Summary

Thomas Johann Seebeck Department of Electronics at School of Information Technologies, Tallinn University of Technology, Estonia, and OÜ Eliko, Estonian, has an opening for an industrial PhD project on the development of multi network positioning algorithms and methods.

Research field:	Information and communication technology
Supervisors:	Muhammad Mahtab Alam
	Ivo Müürsepp
	Sander Ulp
Availability:	This position is available.
Offered by:	School of Information Technologies
	Thomas Johann Seebeck Department of Electronics
Application deadline:	Applications are accepted between May 03, 2021 00:00 and May 31, 2021 23:59 (Europe/Zurich)

Description

Context

Over the years several tracking and positioning systems have been developed and have become a main research topic for industrial application. Technologies such as GNSS, BLE, UWB, 5G, Wi-Fi, Ultrasound have been deployed and improved to meet practical applications and demand from the industry as well as the spread of IoT devices [1-2]. These networks usually are deployed for different use cases and often co-exist, but algorithms to facilitate handovers and roaming between different technologies as well as combining the output of different methods has not been researched to its full potential. Industrial applications require seamless transitions from outdoor and indoor as well as different accuracies and cost-efficiency of different technologies.

Objectives and Tasks

This industry PhD thesis aims to tackle the problems related to multiple positioning systems and improve and develop new methods and algorithms to enable transitions and combined effort from different technologies. The focus of the PhD is to deal with industry application driven research which requires different types of positioning system. In collaboration with Eliko OÜ the PhD thesis will be based on real industry challenges and data, practical environments using existing Eliko RTLS positioning system and add-on systems [3].

Applicants should fulfil the following requirements:

- A strong background in signal processing and applied mathematics;
- Past experience in positioning and UWB technology is highly desirable;
- Excellent knowledge of languages such as, C/C++, (Embedded) C and python as well as tools like Matlab etc.;
- Self-motivated and committed person who takes ownership of their project;
- Excellent writing skills.

Tallinn University of Technology is an equal opportunity university. Female applicants are particularly encouraged to apply.

Eliko is a technology company which specializes and is the leading expert in Estonia in indoor positioning. Eliko RTLS UWB system is based on the Qorvo DWM1000 chip with custom and in house developed hardware, software and algorithms. Eliko has multiple partners and clients across the world and has an active partnership with several industry companies. Eliko is further interested in contributing to the positioning research community and to develop algorithms for the next generation positioning systems.

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Contacts at Eliko OÜ

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References:

1. Mendoza-Silva GM, Torres-Sospedra J, Huerta J. A meta-review of indoor positioning systems. Sensors. 2019 Jan;19(20):4507.
2. Brena RF, García-Vázquez JP, Galván-Tejada CE, Muñoz-Rodriguez D, Vargas-Rosales C, Fangmeyer J. Evolution of indoor positioning technologies: A survey. Journal of Sensors. 2017 Mar 29;2017.
3. Eliko KIO RTLS https://www.eliko.ee/products/kio-rtls/

To get more information or to apply online, visit https://taltech.glowbase.com/positions/277 or scan the the code on the left with your smartphone.