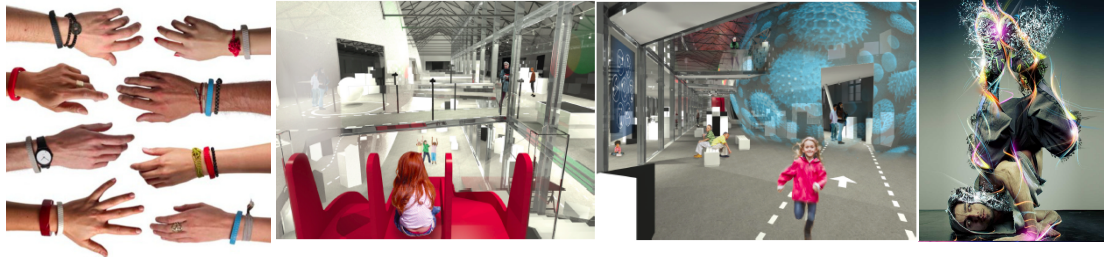




ROYAL INSTITUTE
OF TECHNOLOGY

The ACCESS Linnaeus Center is seeking for a Research Engineer for the The Wireless Bio-Sensors Musical Feedback Demonstration Project (WiBioMusic)



KTH Royal institute of Technology (Stockholm, Sweden) is the largest Swedish international technical university that spans from natural sciences to all the branches of engineering. In 2013, KTH was ranked top 120 University in the world and top 6 Engineering in Europe. The KTH ACCESS Linnaeus Center is the largest research center in Europe for network systems research. The center focuses on several network systems related areas, such as communication systems and networks, networked control, optimization and wireless sensor networks. We perform fundamental research and engage in industrial projects with partners in international projects together with top universities in Europe and the USA, such as ETH Zurich, University of California Berkeley, Stanford, MIT, Caltech, to mention a few.

Background

The WiBioMusic demonstration project will implement a research demonstration at the Tekniska Museet of Stockholm, Sweden, a European top Engineering museum with more than 60.000 visitors per year. WiBioMusic will receive considerable attention on the Swedish Television and newspapers and potentially will be permanently exhibited at Tekniska Museet. WiBioMusic is part of "The Next Generation Strategic Research Areas Research Project" between KTH, Stockholm University, SICS, and ACREO.

In WiBioMusic, we plan to deploy wearable multi-sensors bracelets to collect people's bio signals and provide feedback both to the visitors and to the museum managers to understand the visitors' mental and body emotions, and possibly form the sound and light environment accordingly. We plan to use new fashionable wrist-band wireless sensors that can trace the mental and body emotions. This would allow a true visitor interaction, where public could take part in "real research". During a visit, the visitors will wear multi-sensor bracelets whose data will be wireless transmitted and analyzed in real time over a cloud service. The sensors measure physical data such as hearth rate, stress, breath rate, voice level, blood pressure, body humidity, pollution, and report these readings toward an open cloud platform designed to ease the interconnection of the sensors and people. The participants will receive musical feedback adapted to their physical state. The public not wearing wrist-band sensors will follow the experiment by a large screen with graphical representation of the collected data. How unobtrusive data measurements from people's body can be used for real-time adaptation of music and sounds will be shown as a result of KTH research on sensor networks. In summary, the involved visitors will experience an improvement of the mood, mental state, and environmental perception based on wireless sensor measurements.

Job Qualifications

- Computer Sciences or Electrical or Electronic Engineer, or Master student in these fields near the graduation.

- Excellent knowledge of programming languages such as C and C++
- Ability to develop simple smartphones applications
- General knowledge of networking protocols such as ZigBee, Bluetooth, and WiFi
- General knowledge about Wireless Sensor Networks
- Excellent interpersonal communication
- Excellent problem solving skills

Duration: May-September 2014 with potential extensions

Salary: According to KTH regulations, depending on the experience. Minimum salary after taxes 18,000.00SEK per month, plus social benefits.

Contact person

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