Sensative 2018 - Master Thesis Proposals

Sensative is a fast growing startup in Lund working with IoT, Smart home, Smart building and Smart city technology. Since the start 2013 we have grown to 25 employees. Our first product is Strips, an ultra-thin wireless sensor-family for smart homes with an amazing 10 year battery-life. Our second product line is Yggio, a thin horizontal middleware cloud platform for smart buildings with a open market place for 3rd party smart apps.

Sensative will sponsor Master Thesis within the following areas.
(Note that the final scope of each thesis proposal is open for discussion.)

Sensative will provide space in our open IoT lab "OiL" for the thesis. OiL is located at Mobilvägen 10, Lund

1. Storage as a service
[Web services, databases]

Define and develop an advanced Storage-as-a-Service for the IoT platform Yggio where a user can store any data and allow usage base on set access rights.
Knowledge needed: Javascript, Databases, API

2. Create a developers world
[API as a service, web services]

Create a developers environment with reference apps, test environment and more that is suitable for developers of Apps/Services to the IoT platform Yggio. API: www.swagger.ygg.io.
Knowledge needed: RestAPI, Javascript

3. Smart City services
[WEB services, Smart City]

Define and create a smart city application/service using Lund Smart City Sensor Network (Powered by Yggio) See also www.futurebylund.se/project/open-city-sensor-network
Knowledge needed: Javascript, Webservices, React/Angular

4. Smart City tracking and traffic flow services
[WEB services, Smart City]

Define and develop a service that uses LoRa based tracker devices to create both individual services and Big data services using Lund Smart City Sensor Network.
Knowledge needed: Javascript, React/Angular, Webservices

5. Everlasting wireless IoT sensors for smart home
[Energy harvesting, sensors, IOT]

Define and prototype a solar cell powered wireless (Z-Wave) room sensor for smart homes & buildings
Knowledge needed: Analog & digital electronics, Embedded C.

6. A market place for smart city sensor data
[Web services]

Sensor-data as a service. Define and develop a marketplace for smart city sensor data where an owner of a sensor in an Open City Sensor Network can market and sell access to sensor data.
Knowledge needed: Web services, Javascript

7. Tiny room sensor
[Sensors, IoT, Z-Wave]

Create and evaluate a tiny (< 30 mm diameter) smart wireless in-door all-in-one room environment sensor with more than 10-year battery life. The thesis will use the Sensative Strips Z-Wave platform. The research work is focused around sensors and development of smart algorithms for reading and transmitting sensor values that balances sensor performance with the extreme current consumption requirement.
Knowledge needed: Sensors, uControllers, Embedded C.

8. Outdoor tracking device
[Sensors, IoT, LoRa]

Research and develop a wireless sensor that detects when an object is dropped in water and then sends alarms with positions.
Knowledge needed: Sensors, uControllers, Embedded C.

Applications should be sent (with "Master thesis" in subject header) to: work@sensative.com

Your application should include: 1) CV, 2) latest grade report and/or transcript of finished courses, 3) a short presentation of you are, and (optionally) 4) a more detailed proposal of any of the above rough suggestions.