Bachelor/master Projects + Internship
Fall 2020/spring 2021

Projects:

- Android and iOS app for Bluetooth BLE multi-user to Cloud multi-unit communication (MESH)
  - GUI including paring and unit setup - Credentials, login at social networks - GEO maps and graphical representation

- Cloud solution for handling user/unit information using AWS
  - Data collection and Data base setup – Post processing in the cloud – Cloud Security - OAuth

- Computer vision - Image processing platform.
  - GPU platform selection - Board design - SW design, video capture and processing

- High voltage solar battery charger
  - DC/DC Charging of 300V battery
  - Can bus communication with the BMS
  - MPP algorithm for solar power
  - Amorphous, monocrylline or polycrylline PV system

- AC/DC battery charger
  - Grid connected 300V battery charger
  - Can bus communication with BMS
  - High efficiency charger, SiC or GaN mosfets?

- High voltage to 24 and 5V PSU (Flyback)
  - 300V battery to 24V, 12V and 5V
  - For use as general supply of boat equipment
  - For integration in EV inverter
  - Low standby power draw

- Motor mount and cooling system
  - Modeling of thermals of 50kW motor
  - Modeling of motor mount for tight integration and paralleling of 2 50kW induction motors (maybe additive manufacturing for better custom fit)
  - Creating of cooling system for inverter battery charger and motor

- Instrumentation / user interface for inverter and battery charger
  - Battery charge gauge, time to full/time to empty, limp mode to ensure battery not empty before destination.
  - Safety disconnect of main battery power for maintenance and in case of emergency

- Battery encasing for easy parallel and serial connection as well as protection and modularity
  - Battery case to ensure fragile battery cells are not damaged
• Battery module sizing for ease of placement in tight spaces and easy series and parallel connection
• IP class to ensure salt water won't damage the battery over time

- Battery management system
  • Modular to work with many sizes of battery
  • Allow for paralleling more cells for future range upgrade
  • Can bus to interface with charger and instruments
  • Cell balancing for safety
  • Internal fuse of module

A suitable project will be found in collaboration with the student. Other options can be discussed, so don’t hesitate to contact us regarding other options.

Regarding Internships:
A student doing his/her internship at Circle Consult will besides the project related work participate in the day-to-day tasks, assisting the company engineers.

Depending on experience, these tasks could include:

- Schematic- and layout design and review
- Assembly, mounting and testing of prototypes
- Embedded and/or Windows programming
- App development, IOS, Android
- Documentation

We expect that you:
- Are among the best in your class.
- Has knowledge or experience in some of the mentioned subjects.
- Has a personal drive, is responsible, diligent and hard-working.
- Has an open mind and high spirits.

During internship we offer salary according to the recommendation from IDA.

If interested, or want to acquire further information please sign up at:

http://circleconsult.dk/praktik-eller-eksamensprojekt/

For more information on the company visit: http://www.circleconsult.dk