Diadrom in short

- Software company within Diagnostics of Autotech¹
- Founded in 1999
- Roots in academic research
- About 60 employees
- Traded om NASDAQ OMX First North (ticker: DIAH)

Diagnostics [dai.əgˈnɒs.tɪks] fr Anc. Greek, dia through, gnosis knowledge

With Diagnostics we monitor performance, do fault tracing, improve functionality by download of new software, ensure environmental compliance and give a better customer experience.

¹Wikipedia: Autotech
Diadrom customers

- Personbilar
- Försvar & Säkerhet
- Kommer- ciella fordon & Maskiner
- Fordons- operatörer

The Business

- Professional services
  - Time and material
- Projects
  - Fix price projects
  - Maintenance
- Products (sub set)
  - Diag Studio - A versatile diagnostics tool chain based
  - Dolphin - A verification system for R&D
  - OBA – A predictive maintenance module
  - DiagComp – An embedded module for diagnostics and swdl
Background - Thesis work at Diadrom

- Diadrom runs many thesis projects, for the purposes of
  1. recruiting the students
  2. shedding light on a customer problem that could lead to future business
  3. embrace a learning and research-oriented corporate culture

- However, it is very important the thesis topic is fully aligned with the key goal of the students namely “getting their degree.” To conduct relevant applied research it is important that the research addresses a real world problem that can be validated. For this reason, the Diadrom projects have used customers (like Volvo Group) as empirical partner in many thesis projects. It is also important to keep the interaction the very busy customer staff as efficient as possible (and not be a burden)
Formulating a Thesis project

- It is important that the student picks a subject that is of interest for all involved parties (red spot in figure)
Thesis ideas
1. **Camera Diagnostics – camera or cable**

- Research problem: The use of Advanced Driver Assistance Systems (ADAS) in modern vehicles is increasing. It is a new problem to have data links in the car that are high speed and carry image data (GMSL2). To assure that the links is working appropriately over the life time of the vehicle is and overlooked area.

- Research question: How can diagnostics be performed on the ADAS data links to secure if the cable of the camera is the source of failure?
2. Camera Diagnostics – image distractions

○ Research problem: The Camera image is obviously sensitive for obstacles in front of the lens. In a vehicle, environmental conditions, such as snow, mud, heavy rain, are common conditions

○ Research question: How can an algorithm be developed that can identify if the camera image is obstructed to different degrees?
3. Fault logging with Speech

○ Research problem: When a user is perceiving that a product is failing, it is difficult to capture a rich image of what actually happened. We rely on that the user in retrospect to the situation, often much later, describes the fault. The risk of losing vital data is big.

○ Research question: How could a mobile phone be used to log fault situations (speech to rich data record)?
4. **Automatic automated test case generator**

- Research problem: It is time consuming to write automated test cases verifying automotive protocols. Identifying corner cases is also a major challenge.

- Research question: Is it possible to generate relevant test cases based on a automotive protocol description?
5. Self organizing maps - Diabetes dietary

- Research problem: Millions and millions of people are diagnosed with diabetes every year. Also, in millions and millions of hands you find and advanced smartphone.
- Research question: Can a smartphone get a good-enough measure of the blood glucose level, using a non-invasive method, to recommend diabetes preventive dietary?
6. Know what the user sees

- Research problem: There are thousands of alternative combinations of personal computers, screen resolutions, and browser models that can affect how an application is perceived.
- Research question: Can a monitoring program be designed to record and visualize what the user sees in Web applications?
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https://career.diadrom.se/

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