Group based supervision
An engineering approach

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Who am I

- Master of Science from DTU
- R/D at Pronosco

- Oticon A/S: Industrial PhD student
  - Visit to INRIA Sophia-Antipolis
- Oticon A/S: R/D

- DTU Informatics: Associate Professor
Student supervision

- A long tradition in the section for image analysis (and computer graphics)
- Currently
  - 7-10 supervisors offering project
  - 20-30 students per semester (BSc, MSc, special projects)
Key Ideas

- **Ownership** – students should feel that it is their project

- **Write Early** – do not write the report the last week

- **Management** – student is the project leader

- **Plans** – project plans are required

- **Group meetings** – weekly meetings based on weekly report
We want
The student as the project leader

- The supervisor “employs” the student to do/finish a project
  - Everyday life for an engineer
  - Everyday life for a PhD student

- The student is the expert
  - Supervisors are the guides

- The most important resource: **Time**
  - Student time
  - Supervisor time

- We expect that both the student and the supervisors are well prepared

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Kick-off meeting

- All students and supervisors
  - 30+ people

- General introduction
  - Goals (thesis)
  - Project plan, risk-analysis and weekly meetings
  - CampusNet
  - Efficient literature study

- Ultra short review of the projects

- Groups are chosen by the supervisors after the kick-off meeting
Weekly group meeting

- Every Friday for approximately 1.5 hour

- Be prepared (message to the student)
  - What do you want to tell us?
  - What can we do to help you?

- Weekly report
  - Uploaded latest Thursday evening on our CampusNet group
The plan

- No coding/building/welding/tasting before a plan is made
- The approximate timing of the activities involved

Risk analysis: Dangers of activities being late
  - Used to formulate alternative plans already from the start
  - Doctors providing data is an inherent high-risk activity
<table>
<thead>
<tr>
<th>Week</th>
<th>Activity</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>Finish Literature study - Choose initial algorithms</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Begin implementing algorithms</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>System with first steps implemented</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>Poster for visiondays</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>Data gathering</td>
<td>3</td>
</tr>
<tr>
<td>8-?</td>
<td>Prepare calibration object and orthophoto method</td>
<td>1</td>
</tr>
<tr>
<td>?</td>
<td>Bring calibration object to the airport</td>
<td>2</td>
</tr>
<tr>
<td>?</td>
<td>Test and improve system on various scenes</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Report writing</td>
<td>1</td>
</tr>
</tbody>
</table>

1 : no risk

5 : Very high risk that activity will be delayed
Weekly report

- What has been done
  - Written in thesis-ready language

- Status according to the project plan

- Plans for the coming week
  - Based on supervisor/fellow student input

- Use: Plenty of images, graphs, drawings, references
  - Get Latex/Bibtex/Refman/Endnote running from day one!
The first weekly report

- The Plan
- The students understanding of the project
  - Background
  - Prior work
  - Data
  - System setup
  - Goals
  - Potential methods
- Serve as a contract between the student, the supervisors and external partners
  - A future protection! No cheap programmers here.

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Weekly meeting

- Based on the weekly report
  - Quality of feedback equals quality of report
  - Supervisors will try hard to read and comment the reports

- Plenty of ideas and suggestion arise at the meeting
  - Should be written down
  - Prioritised with the supervisor
  - Tasks should be done in serial

- Limits the use of the supervisor for tool-like questions
  - Latex formatting, Matlab coding, C++ structure
  - Ask the other students

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Events

- Poster creation workshop
- Popular dissemination workshop
- (Paper writing crash course)
How do I start?

- Gather 3-5 projects with somewhat similar topics
- Set a fixed weekday/time and book a meeting room
- Create a CampusNet group
- Organise a kick-off meeting
  - Use the available material as inspiration
- Push the students to write weekly reports
- Read and comment the weekly reports
Concerns

- Balance between *academic* and *process* supervision
- Avoid students feeling that they waste their time during group based supervision
- Scale of difference between students – BSc/MSc, topics etc.

http://www.imm.dtu.dk/~rrp/supervision.html

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