

# SOMETHING ON TEACHING

GERTH STØLTING BRODAL

## **Curriculum Vitæ**

1989–1997 PhD Computer Science, Aarhus University

1997–1998 PostDoc at the Max-Planck-Institut for Computer Science, Saarbrücken, Germany

1998– Research Assistant Professor / Research Associate Professor /

Associate Professor (non-tenured / tenured 2004 / MSK) / Professor, Aarhus University

2014–2019 Chair of the education committee Department of Computer Science

Channel 31  
Session ID thirtyone

Module 3.6

Golgi Apparatus, transport vesicles & lysosomes

- Golgi: repackaging
- Transport vesicles:
  - Secretory vesicles
  - Membrane renewal vesicles
- Lysosomes: digestive enzymes



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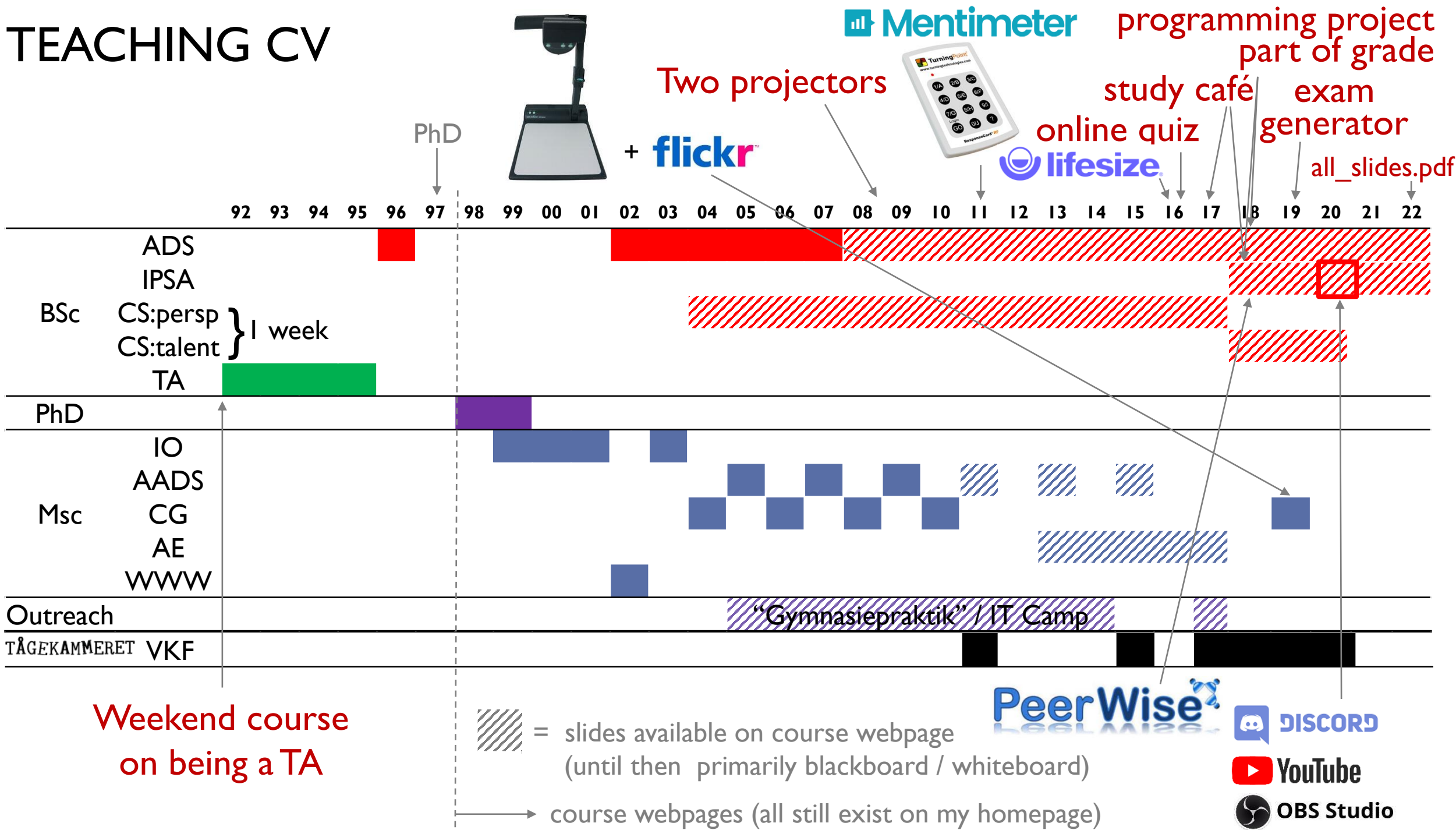
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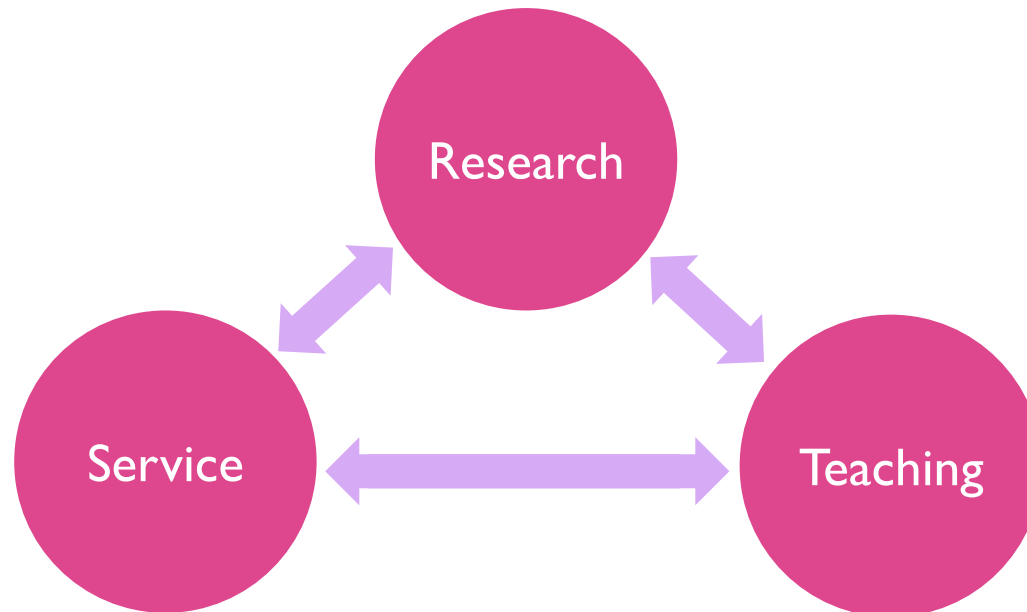
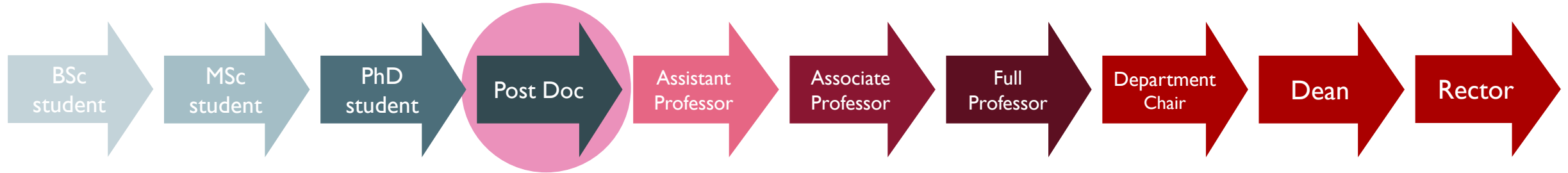





# TEACHING CV



# THE ACADEMIC LADDER



HOW MUCH TIME IS OPTIMAL FOR

YOU

TO SPEND ON TEACHING AND ADVISING  
AS A POST DOC ?

WHY SHOULD

YOU

TEACH AND ADVISE STUDENTS AS A POST DOC ?

# MOVING UP THE ACADEMIC LADDER

LAURA BONETTA, SCIENCE, FEBRUARY 2011

WWW.SCIENCEMAG.ORG/CAREERS/FEATURES/2011/02/MOVING-ACADEMIC-LADDER

“Although tenure decisions at primarily research institutions are based mostly on publications and grants, **more and more universities want faculty members who are also good teachers.**”

“When I first started you just had to be an okay teacher, but **today excellence in teaching is more important,**” says UC Riverside's Linda Walling. Teaching ability is typically evaluated based on **student evaluations** as well as assessments from other faculty in the department.

Therefore it pays for junior faculty to **take any "how to teach" courses** that may be offered on campus and or sit in on the lectures of colleagues who are known for teaching well.

In addition, junior faculty should ask senior colleagues to sit in on their own lectures, not only to obtain feedback but also because “they will be able to write **letters about your teaching abilities** for your tenure dossier,” says Brett Finlay, a professor at the University of British Columbia in Canada. ”

# Aarhus University, Faculty of Science

## Criteria for evaluating Candidates for Positions as Full Professor, Associate Professor, Senior Researcher, Senior Advisor, Tenure track assistant professor, Tenure track researcher

The letters in front of a criterion indicate the demand for a:

- full professor (1)
- associate professor (2)
- senior researcher (3)
- senior advisor (4)
- tenure track assistant professor (5)
- tenure track researcher (6)
- A-criteria are very important.
- B-criteria are also important, but it is acceptable if some are only partly fulfilled.
- C-criteria are qualifications and experiences that are not specifically required by a candidate for this type of position. However, these count positively and may to some extent compensate for not fulfilling all A- and B-criteria.

### Teaching and outreach

Criteria for position number						Amount/Quality for position number			Describing text
1	2	3	4	5	6	1	2+3+4	5+6	
A	A	A	C	B	B		Supervision or co-supervision	Supervision or co-supervision	Supervision of PhD students and Master's thesis students/bachelor projects.
A	A	A	C	B	B	Demonstrated	Demonstrated		Ability to deliver high-quality teaching (e.g. undergraduate/graduate/PhD/continuing education and training)
A	B	B	C	C	C				Development of teaching plans/material.
C	C	C	C	C	C				Implementation/development of innovative teaching methods.
B	B	B	A	C	C				Public outreach, e.g. popular science lectures/articles.



# Scientific Positions

## Assistant Professor (tenure-track) or Associate Professor in Computer Science 862617

### Assistant Professor (tenure-track) or Associate Professor in Computer Science

One or more positions as tenure-track assistant professor or associate professor are available at the Department of Computer Science, Aarhus University ([www.cs.au.dk](http://www.cs.au.dk)) starting summer, 2017.

The department has research groups in "Cryptography and Security" and "Human-Computer Interaction", "Concurrency and Interaction", "Complexity and Logic", "Formal Methods", "Information Security", "Mobile Computing", "Programming Languages", "Software Engineering", "Systems Security", and "Systems Security".

Application material (PDF preferred, max 20 MB, no ZIP)

Application *	<input type="button" value="Browse..."/>	No file selected.
CV *	<input type="button" value="Browse..."/>	No file selected.
Diploma *	<input type="button" value="Browse..."/>	No file selected.
List of publications *	<input type="button" value="Browse..."/>	No file selected.
Teaching portfolio (if applicable)	<input type="button" value="Browse..."/>	No file selected.

systems", "Formal Methods", "Human-Computer Interaction", "Information Security", "Mobile Computing", "Programming Languages".

"Machine Learning", "Software Engineering", "Systems Security", and "Systems Security".

very welcome.

**Applicants for tenure-track positions** are expected to have a PhD and research experience corresponding to a couple of years as postdoc or similar. Applicants must document a promising record of original research and an aptitude for teaching.

**Applicants for associate professor positions** are expected to have research experience from several years as assistant professor or similar. Applicants must document a strong record of original research and have teaching experience at undergraduate/graduate level.

# TEACHING

- Blackboards and chalk
- Whiteboards, color pens, magnets, rope, tape...
- Slides, PowerPoint, interactive projectors...
- Videos – record lectures, podcasts, pencasts
- Prepare videos of material, flipped classroom
- Voting systems, clickers, active learning
- Online material, quizzes, tests
- Peer reviewing
- Learning Management Systems, e.g. Brightspace
- TA sessions, study café, office hours, lab

YouTube



lifesize.



Mentimeter

PeerWise

livescribe™

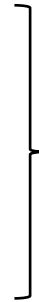


D2L



# TYPES OF TEACHING

- Project advisor
- BSc Thesis project advisor
- MSc Thesis project advisor



More projects simultaneously ?  
Individual vs group projects ?  
Milestones ?  
What is the level of the students ?  
Can the project result in research paper ?

- PhD course lecturer
- MSc course lecturer
- BSc course lecturer
- Teaching assistant on BSc/MSc course
- Outreach (highschool, primary school)

# ADVISING PITFALLS

- **Deadlines** are typically strict – at least bachelor project and master thesis @ CS.AU
- Students not showing up / answering emails
- Procrastination
- Dealing with personal problems (depression, stress, ...)
- Unrealistic ambition level (student and/or advisor?)
- Too much focus on the technical problems, instead of delivering polished report
- Only MSc project is full time work for the students !
- One big goal instead of a sequence of milestones

# DIFFERENT KIND OF COURSES

	BSc	MSc	PhD
Teaching time	★ ★ ★	★ ★	★
Interaction with students	★ (goal 6 hours per week)	★ ★ (goal 5 hours per week)	★ ★ ★
Interaction with TAs	★		
Exam, administration	★ ★	★	★
Polishing lecture material	★ ★ ★	★ ★	★
Research benefit	★	★	★ ★



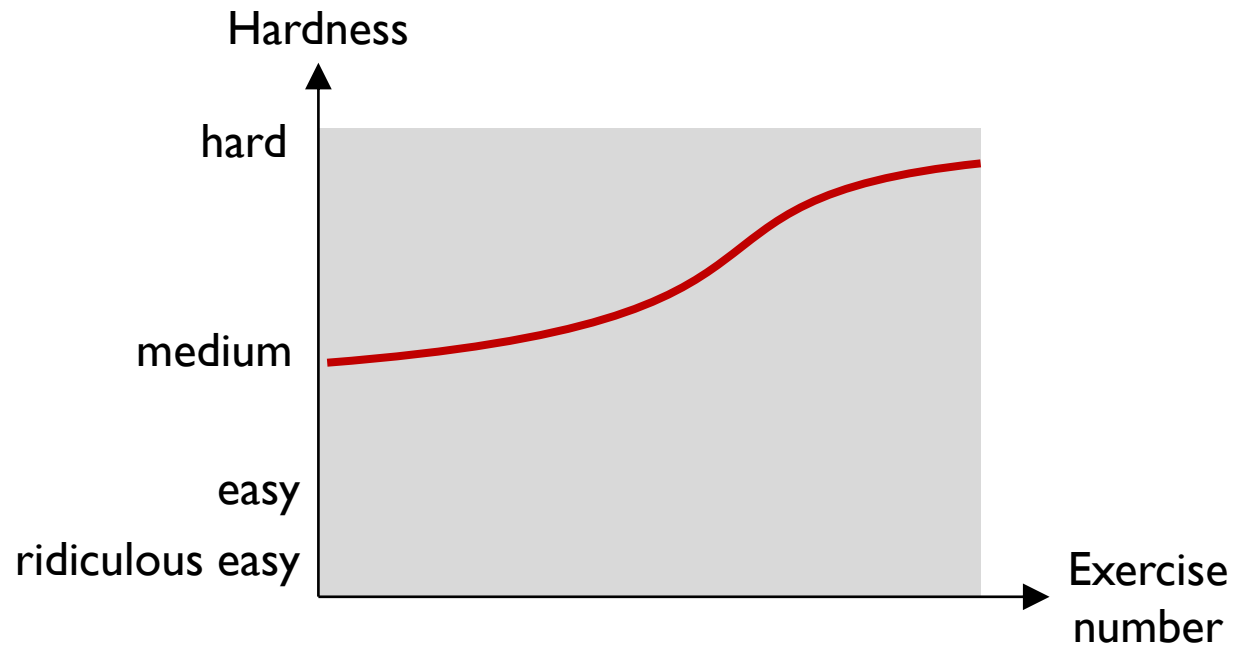
# EXAMS – TYPES OF EVALUATION

- Oral exam
- Multiple choice exam
- Written (computer allowed?)
- Projects + report + oral exam
- 48h Take home
- ...
- Alignment between teaching activities and exam ?
- External censors ?



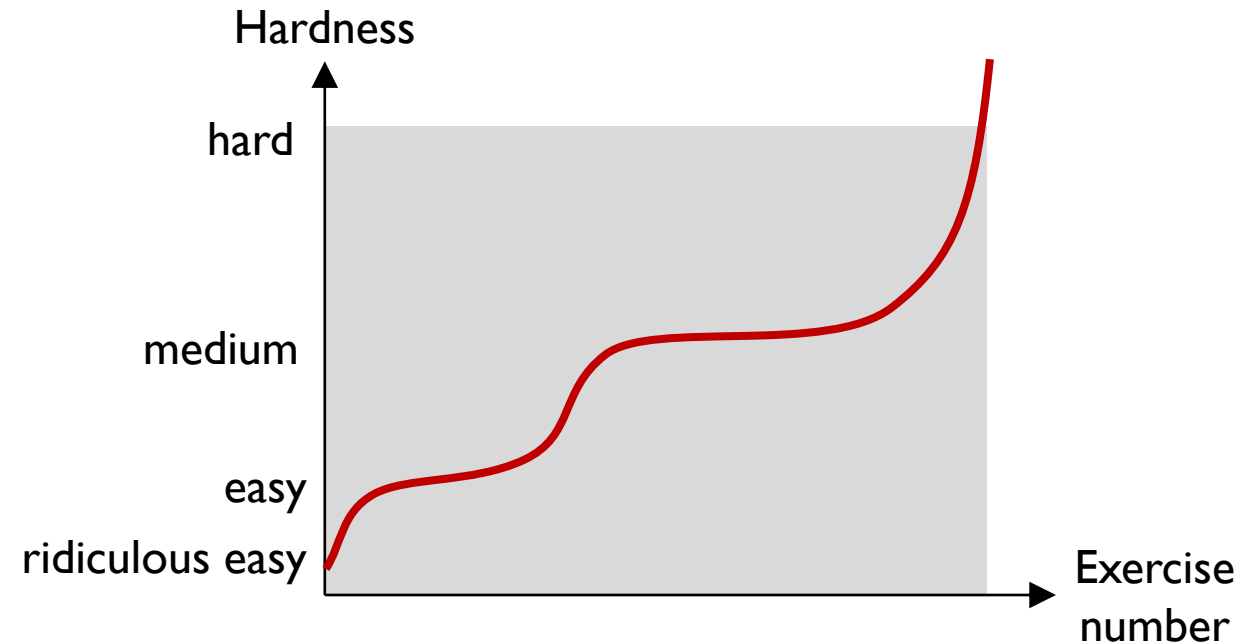
# WRITTEN EXAMS

## *My early years*



- Too many challenging exercises
- Hard to differentiate around passing grade

## *More recently*



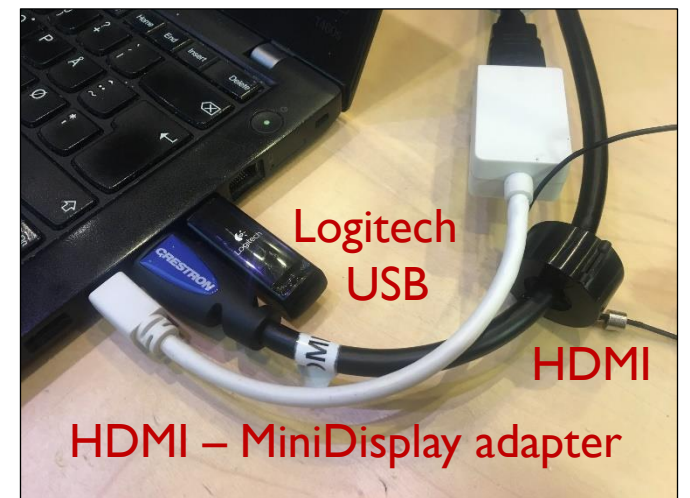
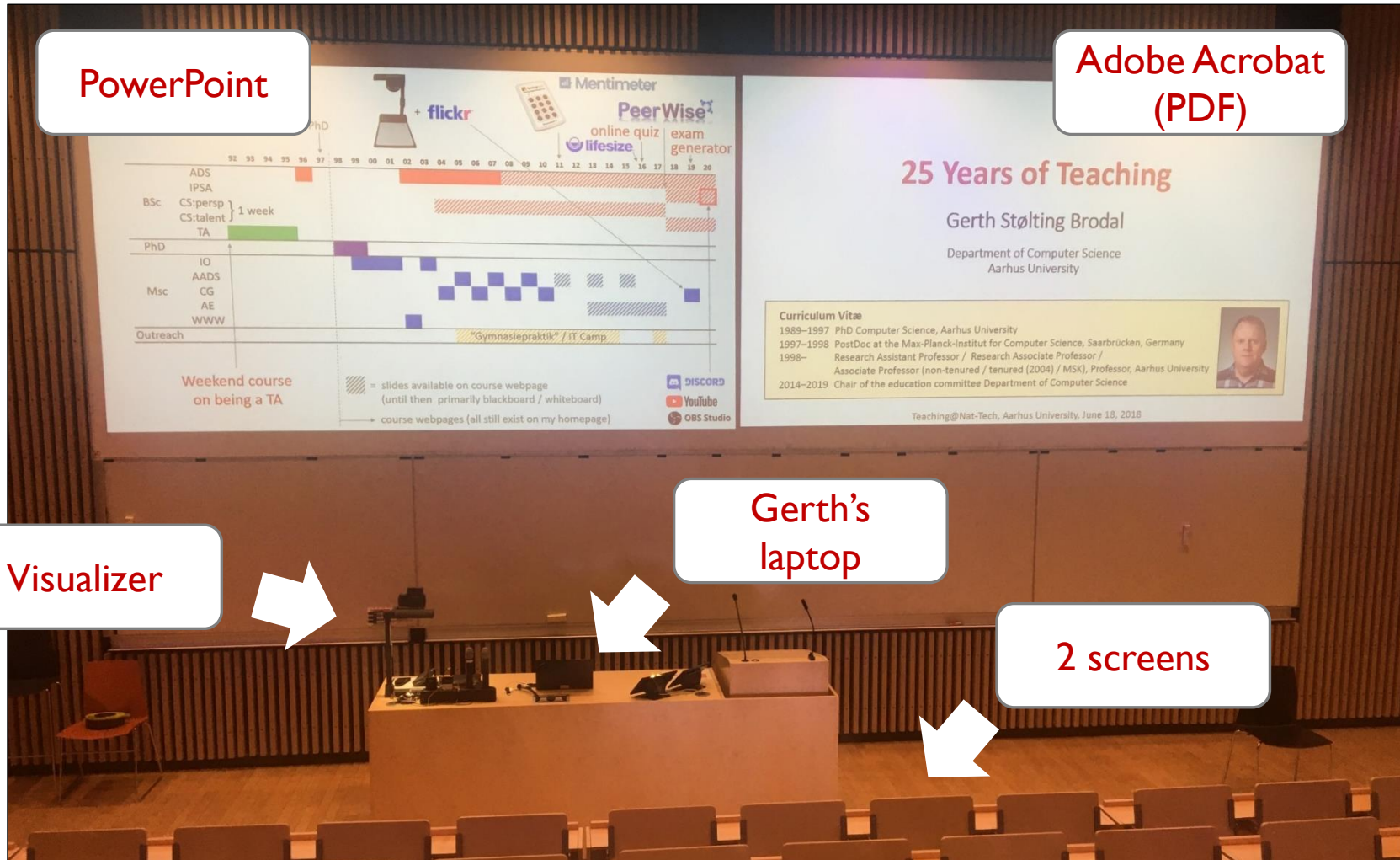
- Sufficiently many easy exercises to get evidence for passing
- Challenge top students

# SOME FINAL REMARKS

- As a Post Doc make a plan for your teaching
- Keep track of your teaching portfolio
- Reflect on your teaching – e.g. course evaluations, courses on teaching, ...
- Try new techniques / approaches / organization / ...
- Discuss your teaching with colleagues and steal good tricks
- Courses evolve over time

Teaching takes time !

# USING TWO PROJECTORS



# CONTROLLING TWO PROJECTORS WITH LOGITECH R700 (WHEN YOU LIKE TO RUN AROUND IN THE AUDITORIUM)



laser pointer (small red point •, hard to track)

next slide (page down)

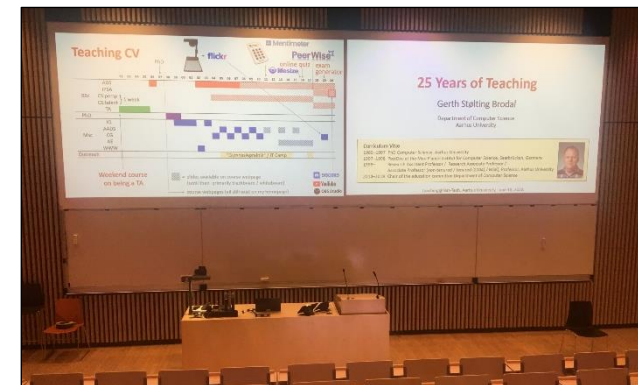
~~black screen (.)~~

reprogrammed to alternate focus between PowerPoint and Adobe Acrobat

(page up) previous slide

~~(ESC / F5)~~ start presentation

reprogrammed to send Ctrl-L in Adobe Acrobat and ESC / Shift-F5 in PowerPoint





# WORKS ALSO WITH LOGITECH SPOTLIGHT



hold to alternate between  
PowerPoint and Adobe Acrobat  
(when configured to “.”)

A screenshot of a presentation slide with a dark grey background. A white circle highlights the title '25 Years of Teaching' in red text. Below the title is the name 'Gerth Stølting Brodal' and his affiliation 'Department of Computer Science Aarhus University'. A 'Curriculum Vitæ' section lists his academic and professional history from 1989 to 2019. A small portrait of the speaker is in the bottom right corner. The footer text reads 'Teaching@Nat-Tech, Aarhus University, June 18, 2018'.

...easier to follow and gets recorded on  Panopto™

## Auto Hot Key script

```
;; Map '.' to switch toggle between AcroRead and PowerPoint presentation

$.:: ; used $ to avoid recursion
if WinActive("ahk_class AcrobatSDIWindow") && WinExist("ahk_class screenClass")
    WinActivate ahk_class screenClass
else
    if WinActive("ahk_class screenClass") && WinExist("ahk_class AcrobatSDIWindow")
        WinActivate ahk_class AcrobatSDIWindow
    else
        Send . ;; Default send '.' if other window not present,
                ;; or other type of window
return

;; In AcroRead allow Logitech presenter to toggle Fullscreen
;; by mapping escape and F5 to Ctrl-L (remote alternates between
;; submitting F5 and escape)

$ESC::
if WinActive("ahk_class AcrobatSDIWindow")
    send ^l
else
    send {ESC}
return

$F5::
if WinActive("ahk_class AcrobatSDIWindow")
    send ^l
else
    if WinActive("ahk_class PPTFrameClass")
        ;; For PowerPoint send Shift-F5 instead of F5
        ;; to continue presentation at current slide
        ;; (instead of starting from slide 1)
        send +{F5}
    else
        send {F5}
return
```

