Introduction to AMOS [1]

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AMOS A01

[1] Agile Methods and Open Source a.k.a. The AMOS Project

Course Goals 1 / 2 [1] [2] [3] [4]

Create useful open-source software and learn agile methods in a Scrum team

[1] Professional = ambition + collaboration with external partner
[2] Agile methods = our focus here, specifically Scrum + XP
[3] We teach both overall processes as well as best practices
[4] Useful software is software that has value to someone!

Course Goals 2 / 2

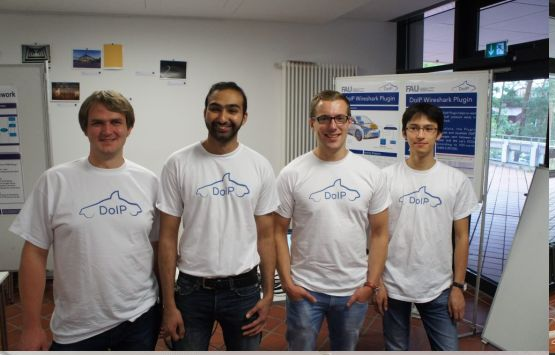
Learning objectives

- Gain conceptual understanding and practical skills of using
  - agile software development methods
  - software project management tools
  - software development tools
- Learn how to work
  - with an external stakeholder
  - in a (student) project team

Project objectives

- Develop useful open-source software
- Perform a great demo on demo-day!

Industry Partners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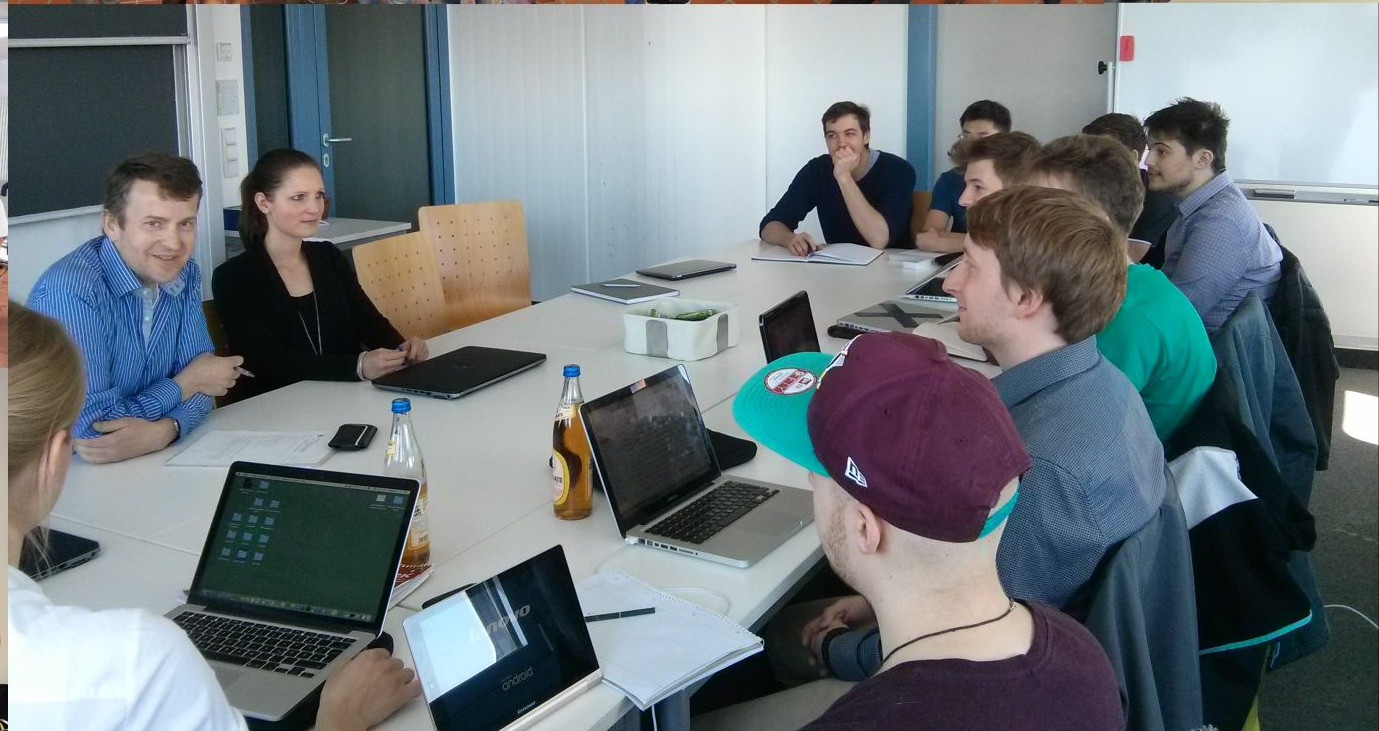

android


This Semester’s Projects

1. OpenSearch load tester with DATEV
2. Backup cluster manager with SEP
3. RTDIP time series forecasting with Shell
4. Robot visual perception with T-Systems

Skills Required for Course

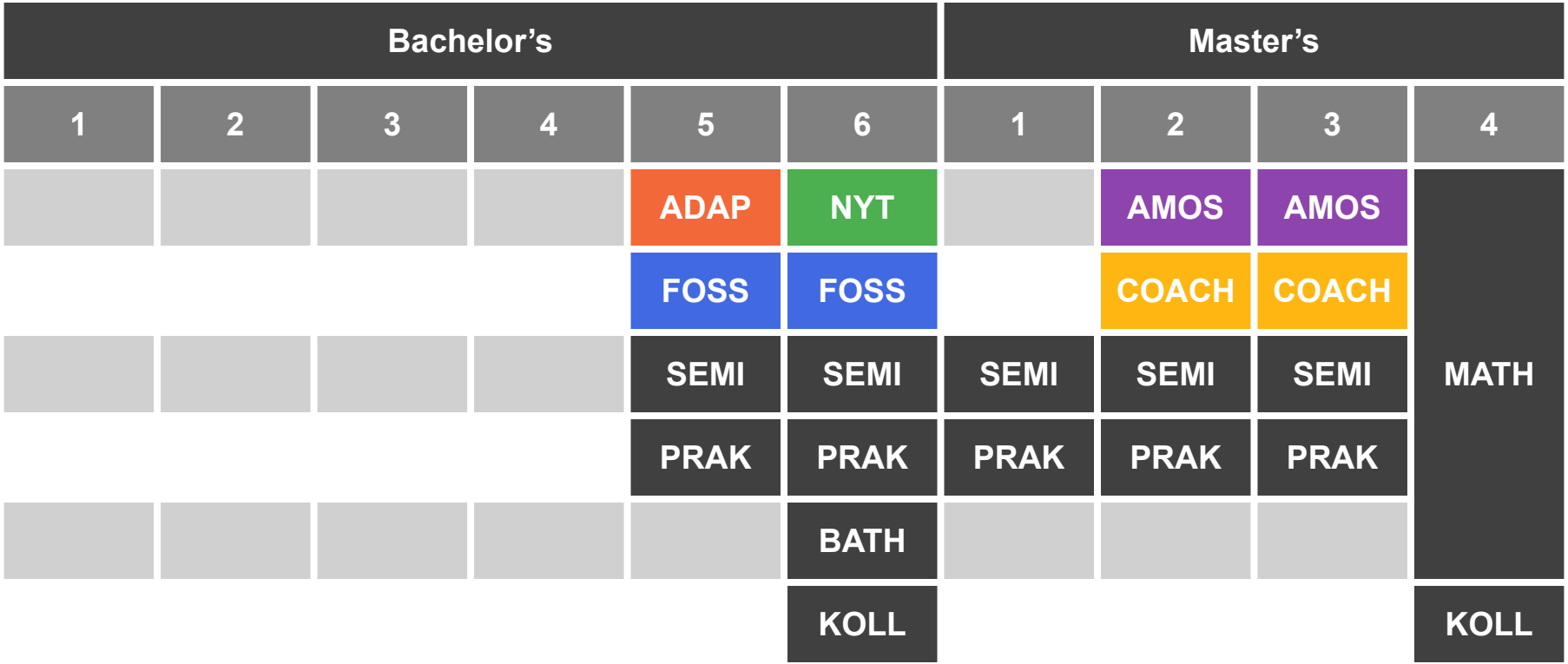
General skills

- Willingness and ability to work in a team
- Ability to acquire skills during the project

Role-specific skills

- Product owner (PO) role
  - Strong conceptual thinking, ability to communicate well, affinity to technology
- Software developer (SD) role
  - Technology (specific to project), development tools like git, test-driven development
- Scrum Master (SM) role
  - Past successful experience as an AMOS product owner or software developer

Course Position in Curriculum



Courses and Modules

		Courses (Lehrveranstaltungen)			
		Lecture (AMOS)	Exercise (team meeting)	Lecture (COACH)	Total ECTS
Modules	AMOS-PO	x	x	–	6 / 5
	AMOS-SD	x	x	–	9 / 10
	AMOS-SM COACH	-	x	x	3 / 5

x = applies
– = does not apply

Availability of Modules

		University			
		FAU	FUB	TUB	
Modules	AMOS-PO	x	–	x	
	AMOS-SD	x	x	x	
	AMOS-SM COACH	x	–	x	

x = available
– = not available

AMOS-PO / AMOS-SD Grading [1]

Product Owner (AMOS-PO)

- Theory (lectures) = 20% of grade
  - 2 SWS in 5 ECTS = 20%
  - As measured by class quizzes
  - Grading scale is [0..10] points
- Practice (project) = 80% of grade
  - Contribution to teamwork = 50%
    - As measured in team meetings
    - Grading scale is [0|1|2|3]
  - Independent work = 50%
    - As measured by artifacts
    - Grading scale is [0|1|2|3]

Software Developer (AMOS-SD)

- Theory (lectures) = 10% of grade
  - 2 SWS in 10 ECTS = 10%
  - As measured by class quizzes
  - Grading scale is [0..10] points
- Practice (project) = 90% of grade
  - Contribution to teamwork = 50%
    - As measured in team meetings
    - Grading scale is [0|1|2|3]
  - Independent work = 50%
    - As measured by artifacts
    - Grading scale is [0|1|2|3]

[1] Also see http://oss.cs.fau.de/teaching/course-resources/grading-schemes-and-scales/

Course Management System

Please sign up on https://myc.uni1.de for the course

Make sure your first and last name match your university credentials

You must use your university email address for your account

All accounts with non-university email addresses will be removed

Scrum Master (AMOS-SM / COACH)

Scrum Master (AMOS-SM / COACH)

- Grading is handled in separate AMOS-SM / COACH course
- The Scrum Master leads process improvement / questions
- The Scrum Master does not represent the teaching team
- They do not handle student performance questions

Additional Rules

Consistent steady work is more important than crunch time

- Three sprints with no (code) work leads to 4,00 (or fail)
- Four or more sprints with no (code) work leads to fail

Still, extra work to catch-up will be rewarded

Class Participation

Participation is mandatory for

- First day of class
- Build process review
- Mid-project review
- COACH workshop
- AMOS demo day

For all other class days

- Class >> Slides >> Videos

Class Quizzes

Each class session starts with a class quiz

- A quiz will test your understanding of last session's topic
- A quiz typically has 5 questions and will last 10 minutes
- The overall quiz is graded using [0..10] scheme (10 points in total)

A class quiz will open precisely when class starts

- The quiz is administered automatically
- There is no way to make up for a missed quiz
- The quiz is an exam; do not use help like an AI

Project Work

We grade by deliverables, see homework document, including

- Regular deliverables (product backlog, code contributions, …) every sprint
- Irregular (one-time) deliverables as they happen

We also grade anyone's individual teamwork contribution when

- We are present in the team meetings (see schedule document)

Our expectations are explained in class and documented as the

- Capabilities timeline and the
- Capabilities timeline explanation

All work is due by the next team meeting, unless stated otherwise

Collaboration and Grading

We (have to) grade you individually

If you collaborate, for example,

- by pair programming
- by pair designing

you agree to be graded jointly

Major Milestones

1. Build process review (quality gate)
   a. You are expected to demo a well working build process
   b. Everyone in the team should be able to do this
2. Mid-project review (quality gate)
   a. You are expected to demonstrate your work
   b. If you fail, you may lose your industry partner
3. Final project release and demo day

Team Issues

We grade your individual performance, not the team performance

- A great team motivates everyone, increases productivity
- Encourage slackers to improve and don’t cover for them

The Scrum Master is responsible for resolving process impediments

Risk Management

Please spend some time thinking about potential risks of your project

- Predictable risks are delays through unavailability of resources

Example risk: Need for computing power to train ML models

- Define your expected needs, ask your industry partner early
- Work on alternative solutions, e.g. use university resources [1]

[1] Almost all universities have a high-performance computer (HPC) center

The AMOS Consultancy

You can ask questions using the AMOS course forum

- Available through your course management system

There is no downside to asking questions (no malus)

- Quality answers will afford a bonus to the answering student

If we only new how to add the fourth role of a practice expert

Course Information vs. Exam Registration [1]

Course management and exam registration are two separate things

If you want to receive a grade

- You must register through your university's exam registration system
  - Your degree program may have split the course into two (VL + UE)
  - Please check asap that the course is available in your degree program!

Otherwise: No grade

[1] German: Prüfungsanmeldung

No Oral or Written Exam [1] [2]

[1] If both you and we don’t want to
[2] You still have to register for the course

Course Language [1]

Class

- Lecturer: English
- Student: Choice of German or English

Project

- Instructor: English
- Team: Choice of German or English

[1] See https://oss.cs.fau.de/2012/03/10/english-or-german-deutsch-oder-englisch/

Course Organization

Course organization a.k.a. information index

- See https://amos.uni1.de

Course schedule

- See Schedule tab on Course organization doc

Work Rhythm

Lectures

- Class day (90min.)

Team meetings

- Next slot after lecture

Project work (self-organized)

- Deliverables due according to schedule

Course Communication

Announcements are sent by email

- Through email aliases
- Through course management system

Administrative questions to teaching team

- Please ask your question in the course forum
- For private questions, use the teaching team email alias

Thank you! Any questions?

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