

# **Analyzing Software using Deep Learning**

## **Introduction (Part 2, Organization)**

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**Summer 2021**

# Overview

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## ■ Motivation

- What the course is about
- Why it is interesting
- How it can help you

## ■ Organization

- Lectures and final exam
- Course project

## ■ Basics

- Program analysis
- Deep learning

# Organization

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- **Eight lecture modules**
- **Reading material and tutorials**
- **Course project**
- **Written exam**

# Grading

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## 50% written exam

- Content of lectures and reading material
- Open book, one hour
- Will test your understanding, not your memory
- Up to 2 bonus points for Ilias quizzes during semester

## 50% course project

- Originality of your approach
- Effectiveness of your implementation
- Code quality and documentation
- Progress and oral presentation

# Ilias

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## **Platform for discussions, in-class quizzes, and sharing additional material**

- Please register for the course
- Use it for all questions related to the course
- Messages sent to all students go via Ilias

# Learning Material

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**There is no script or single book that covers everything**

- **Slides and hand-written notes:**  
Available with the lectures
- Pointers to **papers, book chapters, and web resources**

# Course Project

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- Individual project
- Each student has a mentor
- Same task for everybody
- **Design, implement, and evaluate** a learning-based program analysis
- Based on existing libraries and frameworks
  - Python 3
  - **Pytorch** framework for machine learning

# Course Project: Timeline

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- **Introduced on May 20**
- **Three progress meetings**
- **Due on July 23**
  - Implementation and results
  - Report
- **Presentation: July 26 to 30**

# Course Project: Timeline

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**Grading:**  
(% of overall grade)

- Introduced on May 20
  - Three progress meetings → 12.5%
  - Due on July 23
    - Implementation and results → 12.5%
    - Report → 12.5%
  - Presentation: July 26 to 30 → 12.5%
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- The diagram illustrates the grading breakdown for the course project. It features a list of tasks on the left and their corresponding percentages on the right. Red arrows connect each task to its percentage. A large red line on the right side of the diagram connects the four 12.5% values, indicating that they all contribute to a total of 50% of the overall grade.
- | Task                        | Grading (% of overall grade) |
|-----------------------------|------------------------------|
| Three progress meetings     | 12.5%                        |
| Implementation and results  | 12.5%                        |
| Report                      | 12.5%                        |
| Presentation: July 26 to 30 | 12.5%                        |

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