Introduction to Deep Learning

Exercise 1

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About Me

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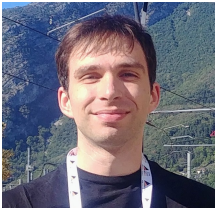
- Max Klabunde
- PhD student
  - Working on topics surrounding neural network similarity
- MSc Computer Science from RWTH Aachen
- Teaching this exercise since 2021



Schedule

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- Come to one of the two sessions on Thursday
  - 12:15 - 13:45
  - 14:00 - 15:30
- If you cannot be here, you can read the uploaded files in Studip

Goals

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- Get a deep understanding of lecture materials by working through examples with pen and paper
- Get practical experience using Pytorch
- Get a good grade in the exam

A Typical Session (?)

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- During class:
  - Solutions to homework of last week
  - Preparation for next homework
- After class:
  - Solve the homework!
  - Pen and paper and coding exercises

Ask questions!

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- In class: anytime
- Afterwards: Stud.IP forum $\gg$ email

Feedback welcome!

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- Third time offering this course
  - Some rough edges remain
- Later session can be influenced by your feedback

Goals for today

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- Organization ✓
- Introduction to Python

Why Python?

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- Simple (?)
  - "Pseudo code"
  - Interpreted → run anywhere
  - Dynamically typed
  - No memory management
- Powerful
  - Large standard library
  - Huge ecosystem
- Extensible
  - Integrate C code for critical parts

Tutorials

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- Countless options for comprehensive tutorials
  - `https://wiki.python.org/moin/BeginnersGuide`
  - `https://python.swaroopch.com/first_steps.html`
  - ...
- Just pick one and follow it
- Today: just the most important stuff

First Step: Setup Your Environment

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- Python installation
- Anaconda for virtual environments to separate possibly conflicting packages
- An IDE of your choice
  - Recommendation: Visual Studio Code
- Will be covered in detail in the homework

Next Steps

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- Writing simple programs to learn syntax of Python
- Using common libraries/packages
- Today demo
- Homework for hands-on experience