Excursion: Applications of Computer Vision

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Organisation of the Excursion

- 1 group

- Excursion topic: Computer Vision in Medical Imaging

- You **have to** visit the excursion to pass the course

General Hospital Vienna (AKH), Computational Imaging Research Lab

https://www.wien.gv.at/gallery2/m53/main.php?g2_view=core.DownloadItem&g2_itemId=13539

Organisation of the Excursion

- 1 Document per group
  - max. 5 pages per student including references
- Content:
  - List of participants and functions (who wrote what)
  - Abstract (editor)
  - Problem statement and solution
  - Presentation slides
  - Example: https://cvl.tuwien.ac.at/course/applications-of-computer-vision-ex/
- Presentation (max. 8 minutes per student)

Organisation of the Excursion

- If you have not attended the lecture on 28th of October 2019
  - Please write an e-mail to licandro@cvl.tuwien.ac.at with your name, student number and e-mail contact to register for the excursion as soon as possible.
- You have to visit the excursion to pass the course.

Excursion Hospital

- Schedule

  - Date: 21.11.2019, Time: 13:00 – 16:00, **Thursday!**

  - Meeting point: 12:45 (s.t.), Währingergürtel 18-20, 1090 Vienna, AKH main entrance
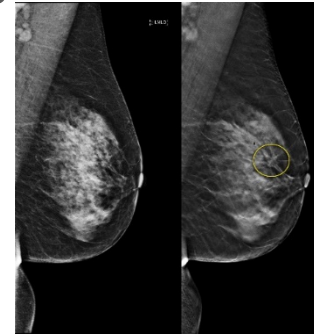
  - MRI scanner visit, CIR-Lab Tour

Excursion Hospital

- Behavior rules during MRI scan in the hospital

  - Confidentiality (Verschwiegenheitspflicht) also for students!

  - Please observe only and follow the instructions onsite
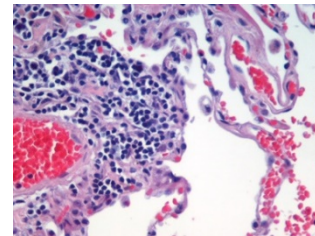
  - Feel free to ask questions

Excursion Hospital

- ## Computer Vision Applications in the Hospital

  - Unsupervised Learning - Radiomics

  - Fetal Imaging

  - Deep Learning in Medical Imaging

  - Imaging Biomarkers

  - Longitudinal Modelling

  - Brain and Neuroscience
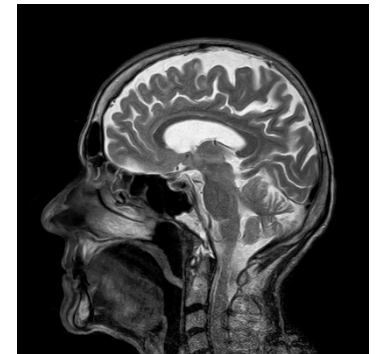
  - Ophtalmic Image Analysis

  - Anomaly Detection

Ultrasound
https://en.wikipedia.org/wiki/Ultrasound#/media/File:CRL_Crown_rump_lengh_12_weeks_ecografia_Dr._Wolfgang_Moroder.jpg

X-Ray Mammography
http://img.medscapestatic.com/pi/meds/ckb/35/15935.jpg

MRI
https://pixabay.com/de/mri-magnetresonanz-r%C3%B6ntgen-sch%C3%A4del-782459/

Histological Imaging
https://en.wikipedia.org/wiki/File:Emphysema_H_and_E.jpg

Tasks

- Find and describe computer vision applications
- Partition the responsibility within the group
  - Editor

    Marshall Shriner, shriner3@illinois.edu
  - Presentation master

    Tobias van der Werff, e11929162@student.tuwien.ac.at
- Present the results
  - Written document (max. 5 pages incl. references)
  - Presentation (max. 8 minutes per student)

Schedule

28.10.2019	**1. Excursion exercise**: Details on excursion, work plan, work flow, preparations
21.11.2019	**2. Exkursion exercise**: Excursion Hospital (13:00 – 16:00)
13.01.2020	**3. Excursion exercise**: Discussion of the 1st document, improvements, planning of presentation
19.01.2020	Deadline Submission of the presentation draft to the group presentation master
20.01.2020	**Final Presentations**: 1 Document submission 1 Presentation submission

> **DEADLINE 1st DRAFT**
> **05.01.2020**
> **Submission to editor**

https://cvl.tuwien.ac.at/acv-schedule-1516/

Thank you

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https://cvl.tuwien.ac.at/course/applications-of-computer-vision-ex/