Master Seminar - HuMANS: 3D Human Motion ANalysiS

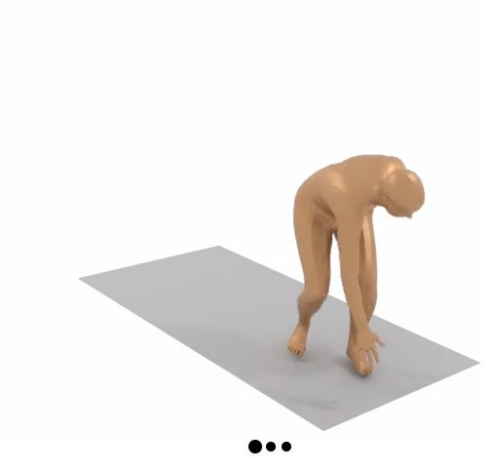
Cecilia Curreli, Mariia Gladkova

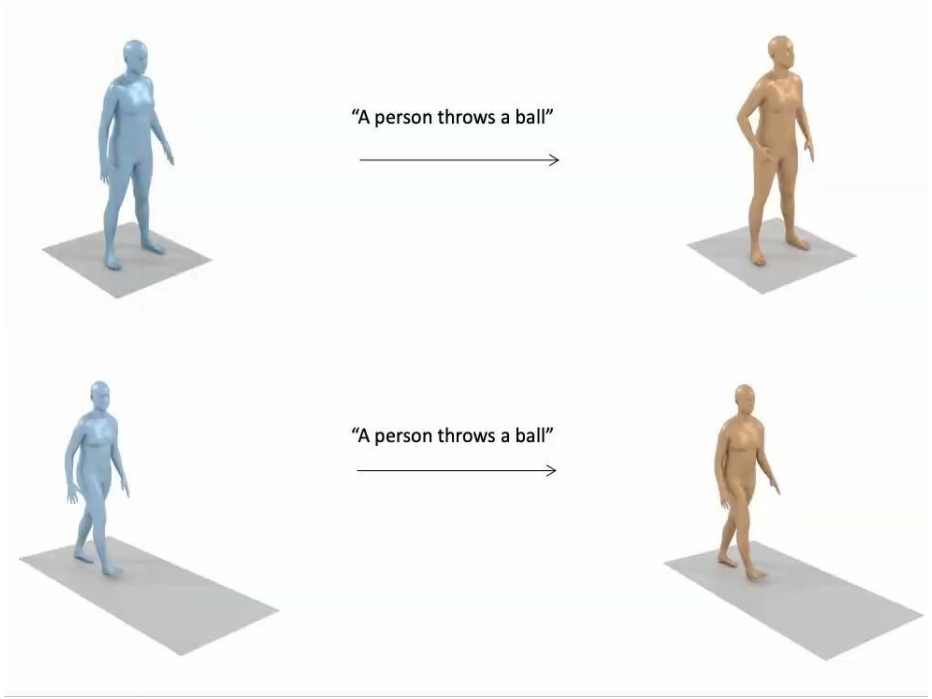
Why HuMANS?

Understanding human world is an exciting direction of great research interest!

[1] Weng, Chung-Yi, et al. "Humannerf: Free-viewpoint rendering of moving people from monocular video." CVPR (2022).
[2] Guo, Chen, et al. "Vid2avatar: 3d avatar reconstruction from videos in the wild via self-supervised scene decomposition." CVPR (2023).

Why HuMANS?

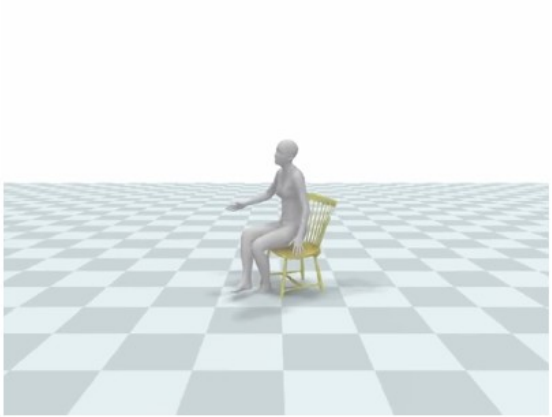




Understanding human world is an exciting direction of great research interest!

Tevet et al. "MDM: Human Motion Diffusion Model" ICLR (2023). Videos from: https://guytevet.github.io/mdm-page/

Why HuMANS?



Sitting on a chair

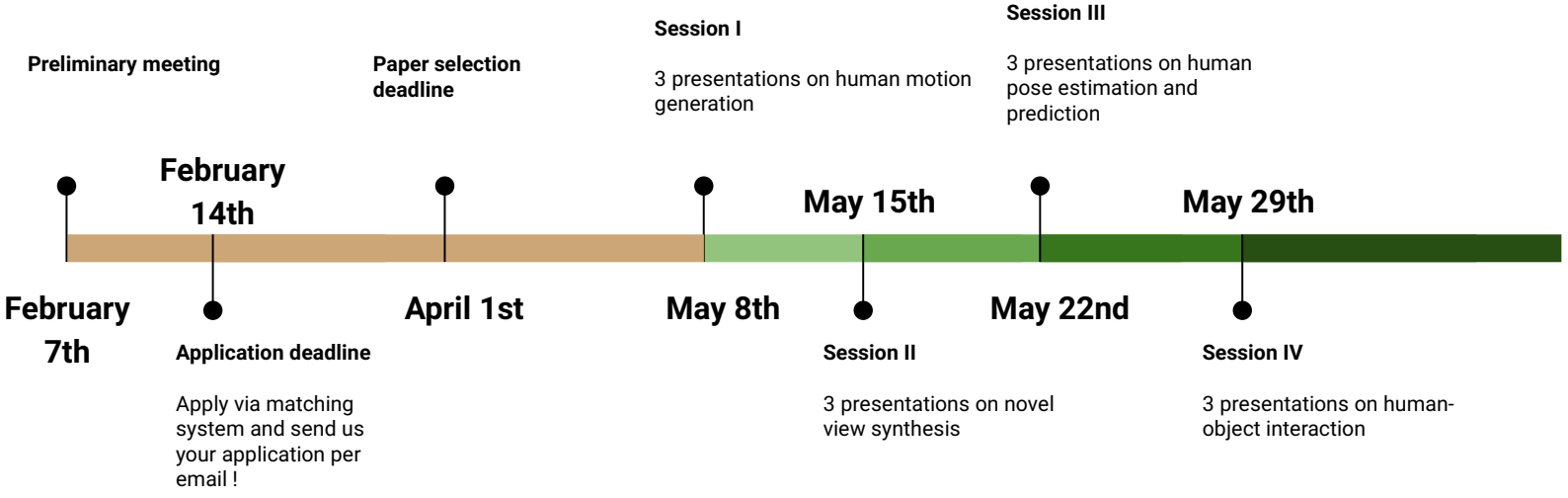
Understanding human world is an exciting direction of great research interest!

[1] Kulkarni et al. "NIFTY: Neural Object Interaction Fields for Guided Human Motion Synthesis" ArXiV (2023) Video source: https://nileshkulkarni.github.io/nifty/
[2] Lee et al. "Locomotion-Action-Manipulation: Synthesizing Human-Scene Interactions in Complex 3D Environments" ICCV (2023). Video source: https://jiyewise.github.io/projects/LAMA/

What are the topics discussed?

- 4D reconstruction & novel view synthesis
- Human motion generation
- Human pose estimation and motion prediction
- Human-object interaction
- Human datasets and benchmarks
- … and many more!

How does the schedule look like?



May 2024, mark your calendars ;)

Further orga stuff

- Meet your supervisor
  - At least 1 week before presentation: paper discussion
  - Monday before presentation: slides discussion
- Write a report
  - LaTeX template would be provided
  - 4 pages summarizing the paper and providing your high level insights
  - Report deadline is due in 3 weeks after your presentation
- All meetings and seminar sessions are mandatory to attend

How does the grading look like?

- Presentation: 50%
- Report: 40%
- Active participation and questions during seminar: 10%

What do I need to know beforehand?

- Previously attended DL lectures, such as I2DL, CV III, 3D Scanning & Motion Capture, and other
- Knowledge of linear algebra, probabilities, non-linear optimization is highly beneficial

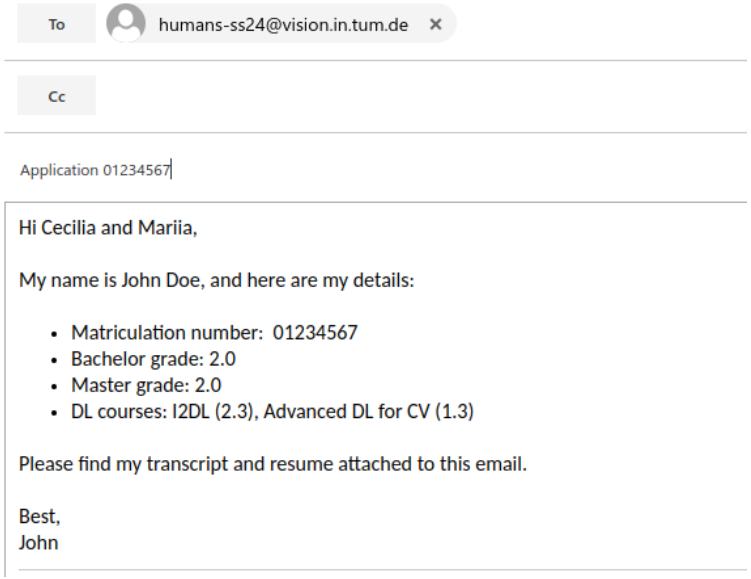
We focus on learning methods, so brushing off the dust from DL notes will help!

I’m interested, how do I apply?

- Apply via matching system and assign our seminar high priority
- Send an email to humans-ss24@vision.in.tum.de (example on the next slide) with
  - Short info about your background (see template)
  - Transcript of records
  - Resume

Two-step verification: matching system + email

Any tips for the email?


To humans-ss24@vision.in.tum.de

Cc

Application 01234567

Hi Cecilia and Mariia,

My name is John Doe, and here are my details:

- Matriculation number: 01234567
- Bachelor grade: 2.0
- Master grade: 2.0
- DL courses: I2DL (2.3), Advanced DL for CV (1.3)

Please find my transcript and resume attached to this email.

Best,
John

Make it concise and relevant to the seminar scope.

Any remaining questions?

Reach out via email for lost+found questions!