Recent Trends in 3D Computer Vision (RT3DCV)

Introductory meeting - Summer semester 2021

PD Federico Tombari
Tutors: Nikolas Brasch, Evin Pınar Örnek, HyunJun Jung
Goals

● You are going to learn:
  ○ about the state of the art in Computer Vision and Deep Learning
  ○ about current challenges in 3D vision

● And also:
  ○ how to read and understand a scientific article
  ○ how to give a tech talk to an audience, and related Q&A
  ○ how to condense a scientific topic into a short and precise article for a broad audience
Seminar contents

- The seminar includes a selection of the most recent and relevant papers in the field of computer vision and deep learning for 3d perception
  - Object detection (6D Object / Human)
  - Pose estimation
  - Generative shape synthesis/3D neural rendering
  - 3D scene understanding
  - Implicit neural representations
  - Object & Scene Reconstruction / Completion
  - Multi view depth estimation
  - Depth completion
Seminar Schedule

- 4 sessions (likely on Friday) + 1 introductory lecture
- 3 presentations per session (30 min each)
- Virtual meeting over Zoom

- Paper assignments:
  - selected students can express up to 3 preferences
  - We will then match them to a paper and tutor trying to maximize global happiness
Presentation

- Each presentation is 15-20 minutes + 10 minutes for Q&A
- Slides templates (Powerpoints, Latex, ..) provided on website
- The presentation should cover all relevant aspects of the paper
  - Introduction and state of the art
  - Main contribution(s)
  - Experimental results
  - Discussion, summary and future work
- The presentation should be self-contained
- All students are expected to attend all presentations and interact during Q&A (this will influence your final mark)
Blog article

- The blog article should summarize the paper in the way it has been presented during the talk, and provide the student’s opinion concerning the main contributions and impact.
- Language: **English**
- Once ready, send the article to supervisor, within **two weeks** from the day of the presentation.
- Format: [Gitlab.lrz.de](https://gitlab.lrz.de) Markdown
- Size: Around **2000-3000 words**
- Examples: **GcGAN, MonoDepth**
Evaluation criteria

- Quality of presentation (slides and speech)
  - Quality of the talk (including speaker’s preparation on the topic)
  - Quality of the slides
  - Q&A
- Quality of the blog article
- Interaction and participation during the other talks
Application

- Register your choices via TUM matching system
- To increase your chances you are encouraged to submit a motivation letter:
  
  rt3dcv@mailnavab.informatik.tu-muenchen.de

  - Name and email
  - Study program and semester
  - A text summarizing your motivation
  - (not mandatory) you can submit your latest CV, transcripts of records or both
  - **Deadline 16.02.2021**
Any questions?