Geometric Scene Understanding

Kick-off

Linus Härenstam-Nielsen, Dominik Schnaus, Weirong Chen,
Zhenzhang Ye, Yan Xia, Nikita Araslanov

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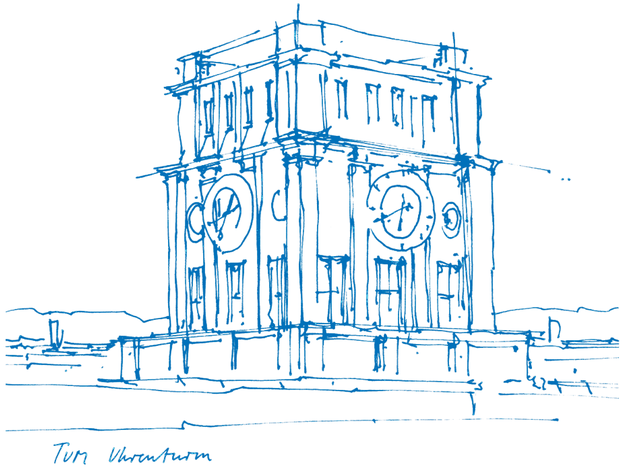
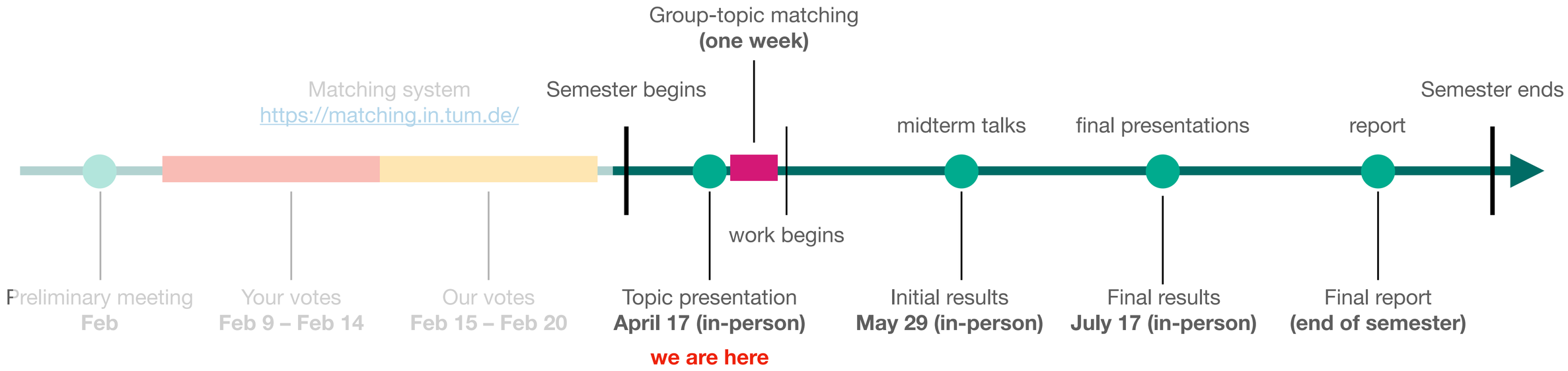


Timeline



- Send us your application (transcripts) by February 14.
- Projects are assigned to groups of 1-3 people.

Today

- We present project topics
  - in total, 6 **research-oriented** topics.

- During (short) topic presentations:
  - note down how interesting this topic is for you;
  - ask topic-related questions.

- After the presentations:
  - find teammates for the project
  - write an email to gsu-ss24@vision.in.tum.de stating:
    - names of students in the group
    - 2 preferences for the project topics

Outlook

What you get:

- An open research problem.
- Teamwork in a group.
- Regular group meetings (e.g. weekly) with an advisor.
- Access to a GPU cluster.

What we get (10 ECTS = 300 hours):

- two presentations (midterm and final);
- project report (due by the end of the semester).

Project report

- 8 pages, CVPR style
  - supplementary material is allowed.
  - accompanied with a well-documented code (reproducible results).

- The project is graded based on its quality and scientific merit
  - 1/3 midterm presentation (clarity, subject understanding)
  - 1/3 final presentation (clarity, methodology, Q&A).
  - 1/3 report (scientific insight, claims supported by empirical evidence).

Topics

1. **Universal Uncalibrated Photometric Stereo with Sparse Views**
   - Advisor: Zhenzhang Ye
2. **DUSt3R-SLAM**
   - Advisor: Linus Härenstam-Nielsen
3. **Visual SLAM with Dense Point Tracking**
   - Advisor: Weirong Chen
4. **Masked Flexible Diffusion Transformers**
   - Advisor: Dominik Schnaus
5. **Cross-Modality Localization for Robot Navigation**
   - Advisor: Dr. Yan Xia
6. **Sym-to-real Multi-view Synthesis**
   - Advisor: Dr. Nikita Araslanov

Next steps

- Find teammates.
- Decide on your project preferences.
- Send us (gsu-ss24@vision.in.tum.de) your team info and topic preferences:
  - a brief description of topic-relevant background.
  - unless already provided: CV/transcripts.
  - deadline: April 21.

- Stay tuned:
  - We assign your team to a project;
  - You'll hear back from your advisor and next steps (April 24).

Questions?

Contact: gsu-ss24@vision.in.tum.de