Data Driven Engineering II: Advaced Topics

Project Meeting I

Institute of Thermal Turbomachinery
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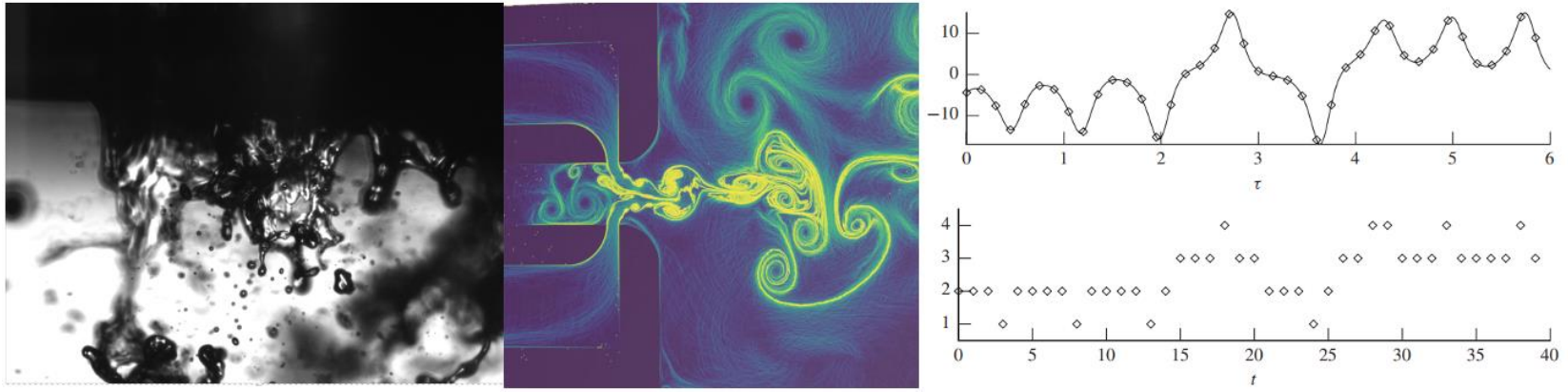
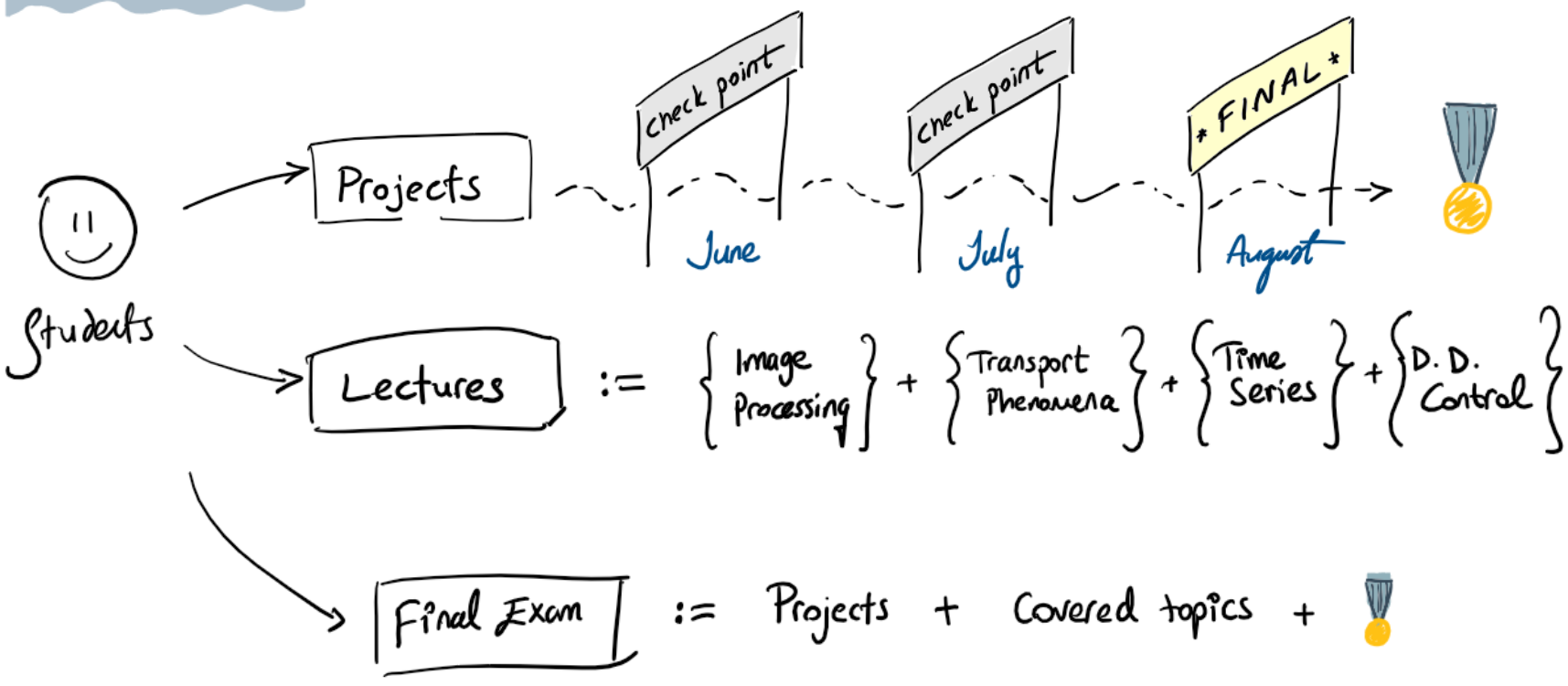


Outline of the day

* Roadmap for the projects
* Toolo that we can use
* Individual project discussions

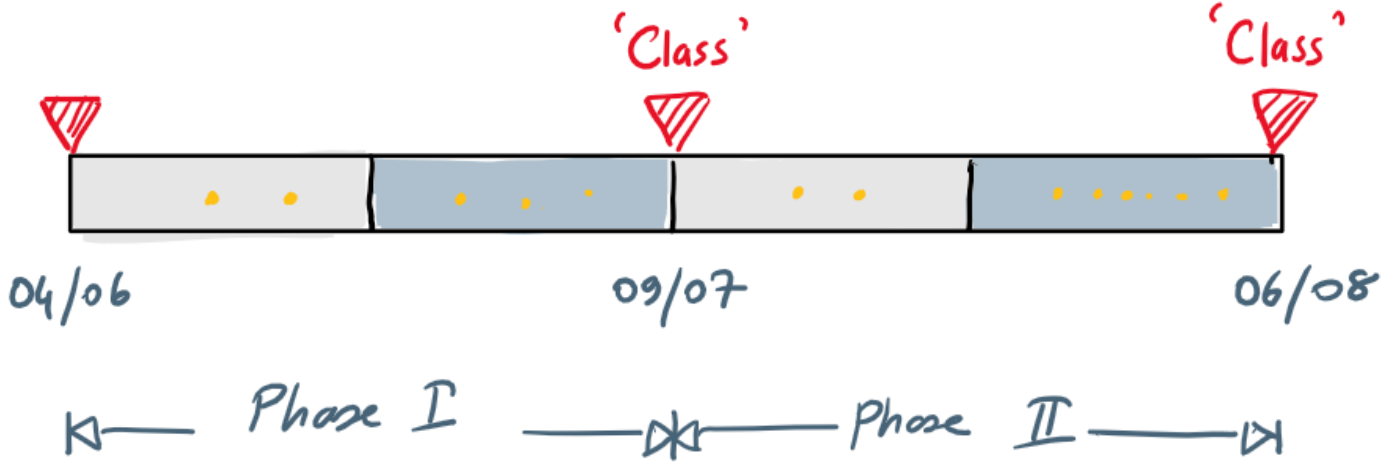
Roadmap :


Projects
check point
June
check point
July
* FINAL *
August
Students
Lectures
:=
Image Processing
+
Transport Phenomena
+
Time Series
+
D. D. Control
Final Exam
:=
Projects
+
Covered topics
+

Roadmap :

* Idea → ability to work with realistic data
  - → Preprocessing
  - → Feature Eng.
  - → Limited # samples labelled data
* → work with open-ended scenerios
* ? what is our objective ?
* → Ability to work in groups

Road map :



Phase I

- [ ] Learn about the physical problem
- [ ] Set an objective together
- [ ] Access the raw data & hardware
- [ ] EDA : Explore & visualize the data.
- [ ] Feature Eng. (?)
- [ ] Transfer learning ⇔ Literature review
- [ ] Decide (alternative) paths → S/US/G
  → pre/post
- [ ] Try to implement one model

Share the load.

In doubt, ask for help

Keep in touch with partners

Project → hands-on exp.
→ time limit.

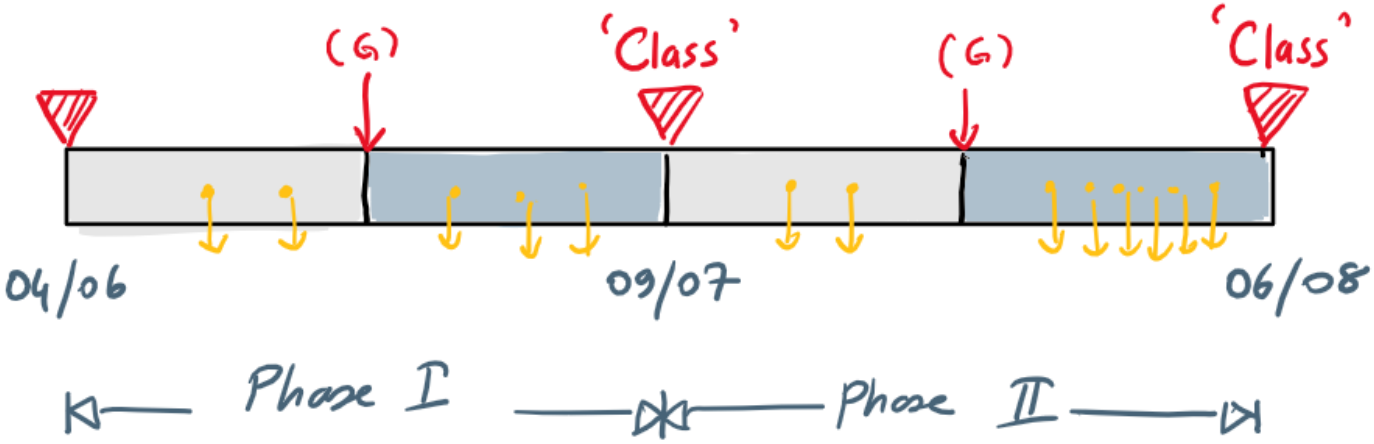
Phase II

- ⇨ have a list of recipes to try
- ☐ Explicitly split the tasks among the group
- ☐ Train / Test ; Train / Test ; Train / Test ...
- ☐ Gather your results for in-class discussions

(3:1) [in group discussion] "Story to tell"

- ...
- models
- strategies
- hyperparameter tuning

Road map :



Tools to be used

(1) Transfer learning → Papers with code

→ arXiv.org

→ GitHub → Awesome open source

→ Scopus / WoS / ...

Tools to be used

(2) Hardware → 'Colab' + Google Drive

→ BW UniCluster 2.0 + BW Sync & Share

↓

Access granted

→ See the wiki

Jupyter @ SCC :

* user access
* access Jupyter ⇒ See the wiki


Project Sessions