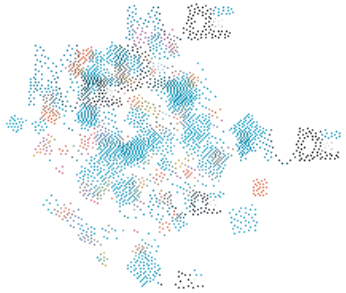
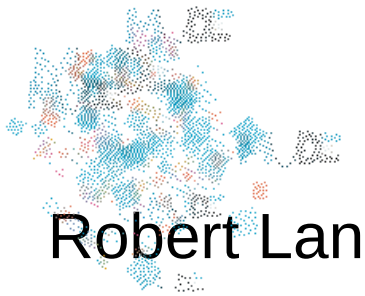


MUDE in Madras Workshop



3 days of fun with…

Robert Lanzafame, Alex Garzon Diaz, Sandra Verhagen

Civil Engineering and Geosciences Faculty

Delft University of Technology

TU Delft

MUDE

Who are we?

- Robert Lanzafame — Senior Lecturer
- Alex Garzon Diaz — PhD Candidate
- Sandra Verhagen — Associate Professor

- Mix of backgrounds, nationalities, experiences
- United in motivation to teach, especially with programming
- Shared experiences in MUDE, but also diverse other educational settings
- Mostly within Civil Engineering and Geosciences applications

TU Delft

MUDE

Who are you?

- Name, specialization

Raise your hand if you…

- Professor, Researcher, PhD – other?
- Non-structural? Non-civil?
- Familiarity with…Python, Jupyter (notebooks), Git
- Software installed?
- Has anyone not seen MUDE materials at this point?

TU Delft

MUDE

Your Expectations: what you want to learn

- Integration of programming in education
- Enable students to submit code-based assignments
- Handling large classes that involve programming
- Incorporate motivating online/digital teaching tools
- Make teaching and learning more efficient (use of platforms, activities, etc)
- Python, Git (→ we add specifically: Git**Hub**, copilot, Jupyter!
- Teach more efficiently:
  - Especially math, programming, visualization
  - Avoid spending a lot of time on installation

Comments/questions? Write them down, we will ask you for them in a few minutes…

TU Delft

MUDE

Your Expectations: what you want for your students

- Capable programmers:
  - Solving engineering problems
  - Adopting new technology
- Focus on understanding mathematics, analysis techniques and programming
  (not on installation or learning popular software)
- Improved graduate curriculum
- Better prepared to tackle problems with inter-disciplinary team (within civil engineering)
- Wider the perspective of topics in civil engineering
- (?)Political and Business related activities and ethical conducts.

TU Delft

MUDE

Our Expectations

Your collective experience:

- Your computer skills are good, but limited experience with the open source tools we use heavily in MUDE
- Limited Python and Jupyter experience, especially with Git
- Matlab widespread but not universal
- Some of you are advanced (programming, Git, etc)
- No prior use of Git in education

- Our expectations are high >>> one of you already made an online book!

TU Delft

MUDE

Expectations: the workshop

Materials will be shared by end of workshop, if not sooner!

Scope:

- Civil Engineering (graduate) education, specifically related to programming
- Use of open source digital tools

How:

- Use our course MUDE as a case study for innovative MSc-level education
- Introduce, use and discuss the use of various (open source!) software
- Reflect on the advantages and disadvantages of MUDE + software
- Discuss and help IIT Madras decide on future course/curriculum changes
- Identify future collaborations in education?
- Learn from each other, and have fun!

TU Delft

MUDE

Discussion: anything to ask/add before we start?

→ We will deal with homework/software issues after the next session

For now, let's discuss:

- Expectations
- Questions about schedule/scope
- Logistics
- ???

If you did not fill out the survey, let us know your opinion now!

TU Delft

MUDE

MUDE Overview

separate slide set

01_MUDE_Intro.pptx

TU Delft

MUDE

Summary (from 01_MUDE_Intro.pptx)

- MUDE is complicated, but fun!
- Expect it to take years to converge
- A small, close-knit team is effective
- Start working now
- Communicate constantly with your students, and be prepared to react
- Keep track of the feedback (also impotant for improving materials)

- We are optimistic this workshop will help!
- This is a lot to absorb, so we start by taking it all in as a student

TU Delft

MUDE

Preparation Materials

- “MUDE in Madras” Homepage: https://iitm-mude.github.io/2024-workshop
- We will cover how to make and use these materials tomorrow
- The materials provided as “homework” are a simple version of MUDE
- Idea was to expose you to the tools and get the “student experience”
- Not perfect, but hopefully you could interpret sufficiently

TU Delft

MUDE

Discussion

- How did you experience starting the course “MUDE in Madras”?
  - Key websites: homepage, book, files, GitHub (assignment)
  - Were the instructions clear?
  - Does this look like something you could use with your students?
- How was the software installation?
- Was it easy/straightforward to get started with the notebooks?
- Could you focus on the “theory” or were you stuck with installation?
- How does this relate to what you currently do?
  - Deploying assignments to students, instructions, format of assignments, etc

TU Delft

MUDE