A proposal

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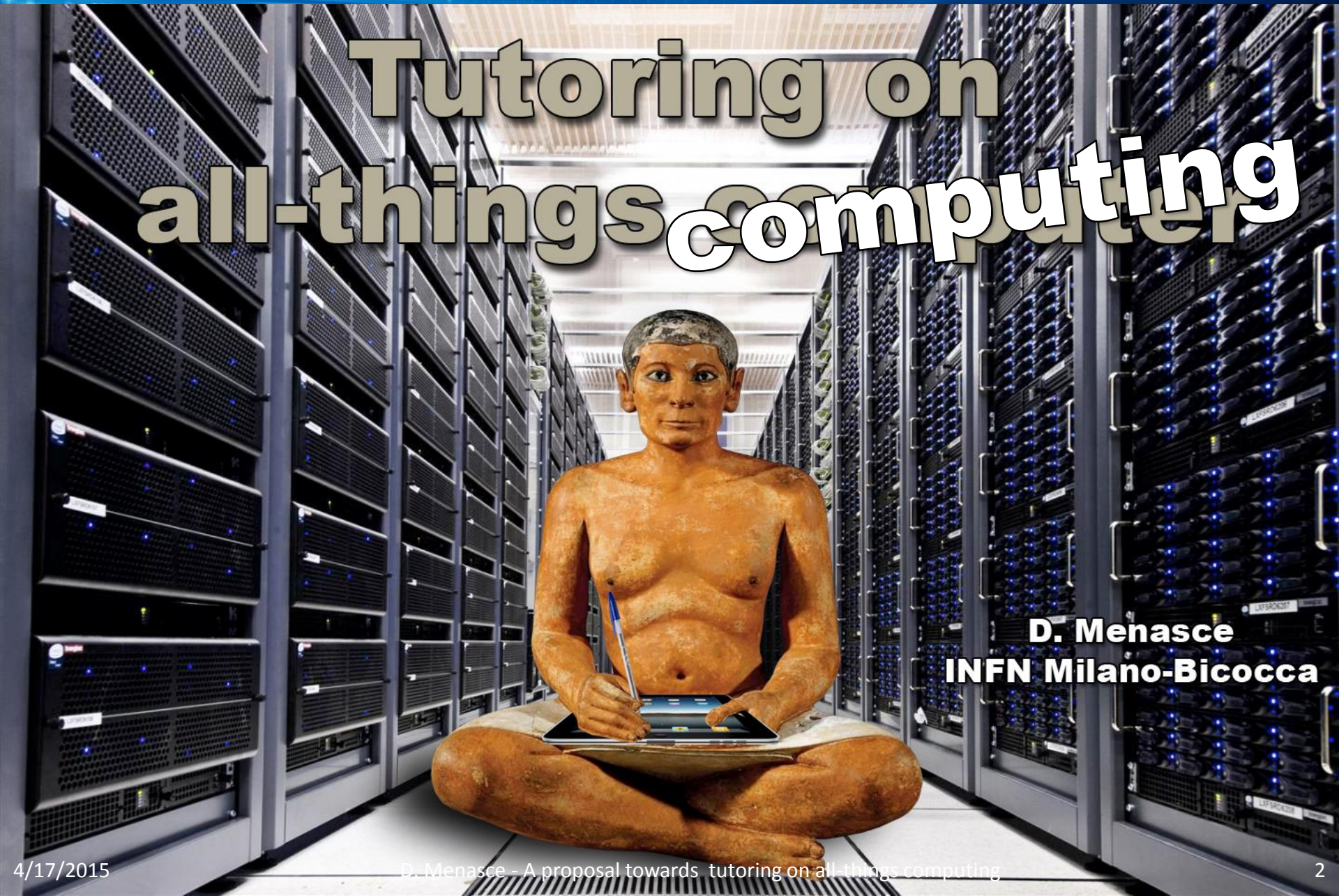

The problem

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- There's broad consensus that a large gap exists between computing techniques taught at Physics University courses and what is required by accomplished young scientist to effectively perform research in his/her field.

- Internationally recognized excellences like the CERN School of Computing, INFN's Bertinoro or GridKa (and others) are not addressing this specific gap since they already assume an *a-priori,* reasonable good level of expertise in computing from their students.

- Moreover, these schools last, at most, for two weeks: longer would be difficult to sustain, both for teachers and students alike (the large gap requires a long initial training with all the consequences on budget and logistics)

The solution (proposal)

- These are therefore not a practical viable option to fill the mentioned gap (expensive, too time consuming, require complex infrastructure,…)

- Possible alternative solution: web-based tutoring (webinars)
  - ✓ Drastically reduced effort (cost and man-power)

- Two approaches possible:
  - ✓ Join existing efforts (Software Carpentry, WikiFM,…)
  - ✓ Start our own platform

  - ✓ Pros and cons to be carefully evaluated
  - ✓ Key: decide and make rapid and convincing progress quickly

  - ✓ Not yet decided best approach

- Focus on:
  - ✓ **Basic**, introductory, courses (languages, OS, techniques)
  - ✓ Unified knowledge base: links to large amount of existing material
  - ✓ Documentation is an essential ingredient: hub to available doc in several domains (eventual contributions to improve existing one)
  - ✓ Specialized towards **scientific computing** (algorithms, abstraction, …)
  - ✓ On-line **exercises** (self-tutoring)

What

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- Already contacted interested would-be tutors in several domains:
  - ✓ Languages (compiled & interpreted, C++, Python, JavaScript…)
  - ✓ Operating systems basics
  - ✓ Tools (ROOT, GEANT4)
  - ✓ DAQ (interrupts, I/O, shared memory, …)
  - ✓ …
- Webinar approach suits both teacher and students busy schedules in an optimal way (lessons can be prepared or followed in asynchronous chunks, whenever time becomes available).
- Parallel to courses (in various formats), we propose the establishment of a *hub of training material*, with a discussion forum (containing threads in several areas of computing) and a bulletin board for students to display their software projects (join forces with OpenData/Outreach?)
- Have still to decide the model:
  - ✓ Totally open to any contributor without restraints
  - ✓ Sort of a *peer-review* (to raise the level of the offered training and keep it focused towards scientific computing)

When

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- The sooner the better
- Some people willing to contribute already identified in different domains (more are welcome in the future)
- We think that the problem of solid preparation on all-things-computing is strongly felt in our community and we are trying to find an affordable and efficient solution to the problem