

Introduction to computer science

GIGA Doctorate School

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Who am I?

- ▶ Master in Electrical Engineering and Ph.D. in Engineering
- ▶ FRS-FNRS Senior Research Associate
- ▶ Research and interest in “neuroimaging methods”
→ data processing of brain images (MRI and PET) and electrophysiological data (M/EEG)
- ▶ Linked to:
 - GIGA *in silico* medicine & GIGA CRC *in vivo* imaging
 - Department of Electrical Engineering & Computer Science



Who are you ?

- ▶ Background
- ▶ Programming experience?



Course program

- ▶ Check <https://indico.giga.uliege.be/event/146/> for the slides

MONDAY, 5 OCTOBER

09:30 → 10:30 **Introduction to computer science : historical perspective, computer structure, operating systems & languages** ⌚ 1h

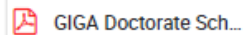
Speaker: Prof. Christophe Phillips (GIGA in silico medicine & CRC in vivo imaging)

11:00 → 12:00 **Data representation & storage: bits/bytes, data format, signal discretization, compression** ⌚ 1h

Speaker: Dr Mohamed Bahri

13:30 → 14:30 **ULiège IT resources by the SeGI/UDI's + Mass storage** ⌚ 1h

Speakers: Marie-Catherine Bouquieaux, Mr Yves Wesche



14:30 → 16:30 **Matlab & Octave practical** ⌚ 2h

MONDAY, 12 OCTOBER

09:30 → 10:30 **Introduction to algorithmic thinking: Different types of algorithms, computer logic.** ⌚ 1h

Speaker: Dr Mohamed Bahri

11:00 → 12:00 **Good practices in scientific computing: Code modularity, validation, optimization, documentation** ⌚ 1h

Speaker: Prof. Christophe Phillips (GIGA in silico medicine & CRC in vivo imaging)

13:30 → 16:30 **Matlab & Octave practical** ⌚ 3h

MONDAY, 19 OCTOBER

09:30 → 10:30 **Code versioning & Git, an introduction.** ⌚ 1h

11:00 → 12:00 **Working with mass-storage, clusters & parallel processing: parallel processing, data management, resources.** ⌚ 1h

Speaker: Alice Mayer

13:30 → 16:30 **Matlab & Octave practical** ⌚ 3h



MONDAY, 26 OCTOBER

09:30 → 10:30 **Working with personal data ? Think GDPR!** ⌚ 1h

Speaker: Mr Pierre-François Pirlet

11:00 → 12:00 ⌚ 1h

Data processing in genomics, from the sequencers to the results: data management, pipelines and containers, reproducibility.

Speaker: Dr Arnaud Lavergne

13:30 → 14:30 **GitHub/Gitlab account hands-on check and explanations** ⌚ 1h

14:30 → 16:30 **Matlab & Octave practical** ⌚ 2h



Let's go!

