ZZ3 ISIMA FI – M2 ICS “Simulation”

Subject :

- Introduction to Stochastic Discrete Event Simulation
- From MC simulation to simple multi-agent simulators

Staff:

- Instructor: David Hill
- ISIMA/LIMOS
  UMR CNRS 6158
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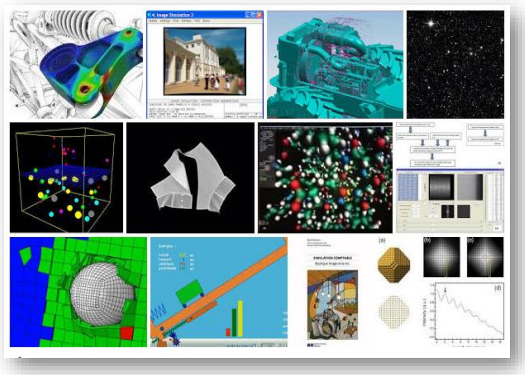


Web Page:

- http://www.isima.fr/~hill/ZZ3-M2-Simu/

Today

Introduction

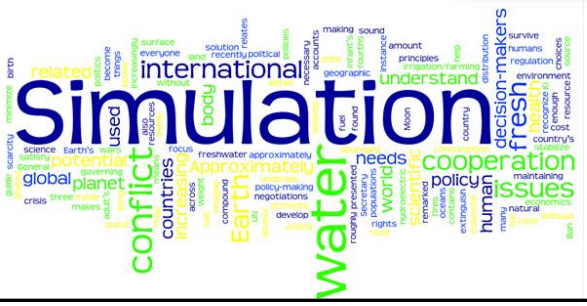
Administrative stuff

Why *A simulation project*?

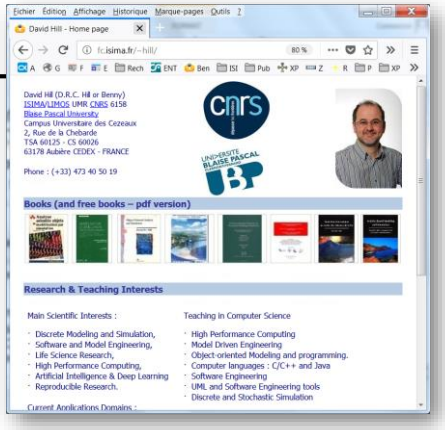
Overview of the course

Start of the course

THE SOCIETY FOR MODELING & SIMULATION INTERNATIONAL



A bit about me



David R.C. HILL
(Aka “Benny”)

“Relatively old” faculty
- Started teaching in 1989…
- Ph.D 1993, Blaise Pascal Univ.
- *ISIMA UCA & CNRS (50/50)* Teaching *&* Research

Teaching :
- I am still learning…
- Aim : learn useful cool things and transmit what you have learned (both you and me!)

Research
- High Performance Computing & Simulation
- Bioinformatics, Nuclear Medicine, Reproducible Numerical Computing, Philosophy and Ethics and recently : security

Course Outline

Part I: Introduction to simulation and modelling
- Notions of models, time and system
- Discrete and continuous simulations…
- Monte Carlo simulations…

Part II: Randomness
- Random numbers generators
- Bad & good news

Part III: Bio-inspired simulations
- The first life simulation model
- 2D Cellular automata

Part IV: Multi-Agents Simulations
- Different kinds of MAS (demo)
- Design of your own spatialized MAS
- Development of your design

Sign up for your class participation from time to time

Course Organization

Integrated Course

PPT, Formal training & Labs

Grade & Assessment requirements:

1. Lab participation (25%)
   - Writing codes, sending codes for some labs,
   - Pace of your development
   - Discover coding & comment styles
2. Class Participation (25%) – Being there enables :
   - Asking questions and have debugging & explanations
   - Debate and propose ideas, web sites of videos, etc.
   - Attending labs is a way to show you are involved.
3. Written Lab reports (50%)
   - Analysis, Specifications, Design and development
   - Printed reports for at least two Labs

Class Participation

Keep a “Laboratory book” :

Take notes of your understandings, design and coding progress (always a good idea and it saves your time for the writing of reports!).

The format is up to you. At least, you need

to have:

- Summary of key points
- A few Interesting insights, “aha moments”, keen observations, etc.
- Weaknesses of approach. Unanswered questions. Areas of further investigation, improvements.

Share your thoughts in the lab & code writings and in class if you think its worth.