

Introduction to the course

Year 2016–17

(01 OPJIU) Empirical Methods in Software Engineering

<http://softeng.polito.it/EMSE/>



SoftEng
<http://softeng.polito.it>

Version 6.0
© Marco Torchiano, 2017






This work is licensed under the Creative Commons Attribution–NonCommercial–NoDerivatives 4.0 International License.

To view a copy of this license, visit

<http://creativecommons.org/licenses/by-nc-nd/4.0/>.

You are free: to copy, distribute, display, and perform the work

Under the following conditions:

-  **Attribution.** You must attribute the work in the manner specified by the author or licensor.
-  **Non-commercial.** You may not use this work for commercial purposes.
-  **No Derivative Works.** You may not alter, transform, or build upon this work.
 - For any reuse or distribution, you must make clear to others the license terms of this work.
 - Any of these conditions can be waived if you get permission from the copyright holder.

Your fair use and other rights are in no way affected by the above.

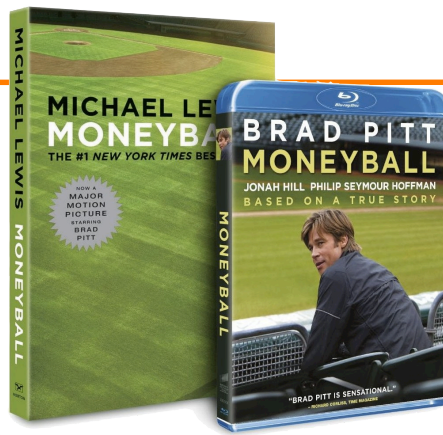
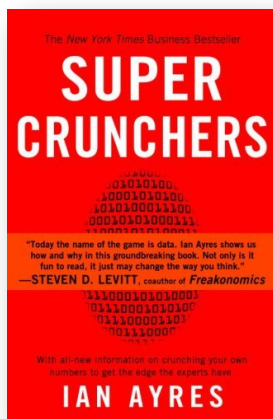
Who

- **Marco Torchiano**
 - ◆ Software Engineering group
- And what about you?
 - ◆ Who are you?
 - ◆ Which is your research topic?
 - ◆ What do you expect from this course?

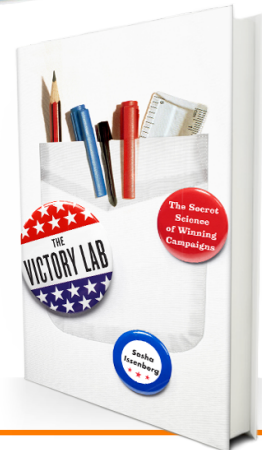
Motivation

- An increasing number of empirical studies are being conducted
- A common basic knowledge is required
 - ◆ To improve quality of studies
 - ◆ To design and discuss the studies
 - ◆ To understand and assess them

Not only Soft Eng

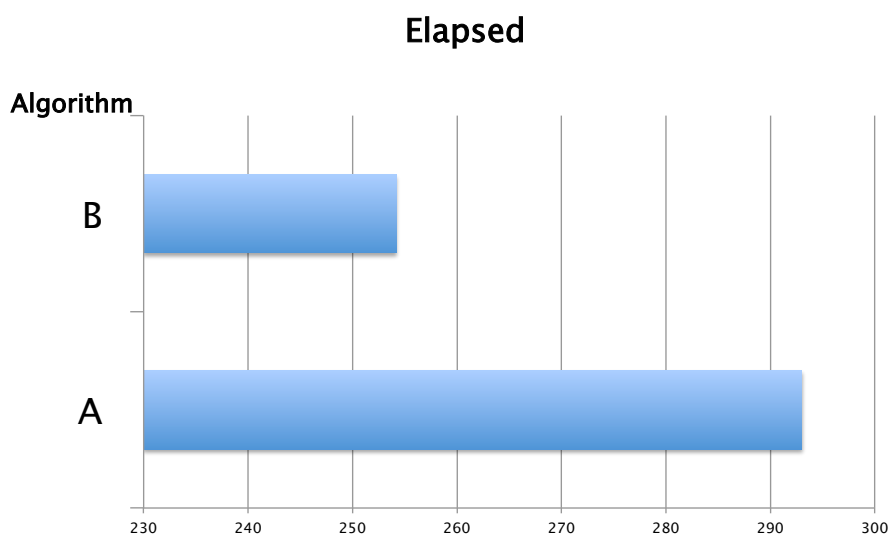


the signal and the noise and the noise and the noise and the noise why so many predictions fail – but some don't the noise and the noise and the noise nate silver noise noise and the noise



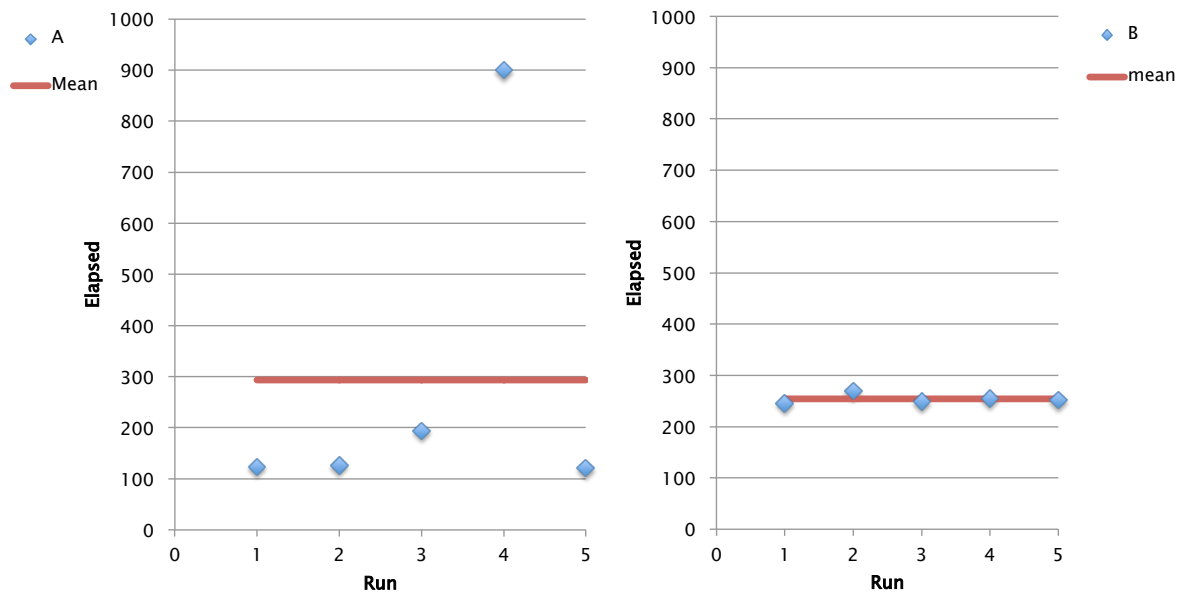
SoftEng
<http://softeng.polito.it>

Sample results from a study



SoftEng
<http://softeng.polito.it>

The actual data



Required Skills

- Visualize data properly
- Design a valid experiment
 - ◆ Define proper measures
- Analyze data
- Assess existing literature evidence

+

Understand the epistemological basis

Topics

- Empirical Method
- Systematic Literature Review
- Experimental Process
- Measurement
- Data Analysis
- Data Visualization
- Surveys

Exam rules

- Alternatives
 - ◆ Dirtying your hands with an experiment
 - Collective experiment
 - Re-analyze data
 - ◆ Appraisal
 - Perform a SLR on a topic of your choice
 - Characterize and assess empirical study
- Must be completed within July 2017

Schedule

- Tue 7 Feb, 14:00 – Introduction
- Wed 8 Feb, 14:00 – Experimental process
- Wed 22 Feb, 14:00 – Software Measurement
- Thu 23 Feb, 9:00 – Systematic Literature Reviews
- Fri 24 Feb, 14:00 – Data visualization
- Tue 28 Feb, 14:00 – Data analysis
- Thu 2 Mar, 14:00 – Population surveys