Performance Evaluation

Jean-Yves Le Boudec

2017
Your Team

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Where to start

moodle.epfl.ch or http://perfeval.epfl.ch
Open access
Enrolment on Moodle required for submissions -- is in principle automatic; if not, send a mail to eleni.stai@epfl.ch
We use speakup for in-class MCQs
Please go to speakup.info or start speakup app
Join the room number written on the board

A. I am a masters student in CS
B. I am a masters student in Com Sys
C. I am a masters student in some other program
D. I am a PhD student
E. I am not a student
F. None of the above
Learning = Lecture + Homeworks + Miniproject

Lectures Tuesdays 10-13, INR 219
Labs Thu 10-13, INF 119: 4 graded homeworks:
  1. Scientific method (weeks 1-2)
  2. simulations and statistics (weeks 3-4)
  3. queuing (weeks 5-6)
  4. Forecasting (weeks 7-8)
Mini-project: your own performance evaluation (based on your own semester, masters, phd project, or papers in the literature)
Grading

One oral exam = $E$
Average of homeworks = $H$
Mini-project grade = $M$
Final Grade = $(E + H + M)/3$

I will ask you one question about your homework or mini-project during the oral exam

Exam is oral; documents are allowed for preparation phase, not during examination phase.
Lecture Notes

Text book
Performance Evaluation Of Computer And Communication Systems
Jean-Yves Le Boudec

http://perfeval.epfl.ch

2010, 420 pages, 16x24 cm, Hardcover

Pdf freely and legally available
Slides on moodle
Outline of the Lecture

Lectures
1. Methodology (today)
2. Confidence Intervals
3. Simulation
4. Queuing
5. Forecasting
6. Model fitting
6. Tests
7. Palm Calculus

Labs
L1
L2
L3
L4
Performance Evaluation Mini-Project

Goal = Practice skills of performance analyst

Typically based on a project of your own
- Current or past, done outside this course
- May also be based on one or several published papers
- May also address a methodology issue (instead of case study)

Technical work: size of 2 homeworks

Presentation is important
Examples of Past Projects

1. Evaluating the impact of batch size in Squall
2. Forecasting the CHF/EUR exchange rate
3. Performance of compression algorithms for genomic data
4. Performance comparison between Python and non-script languages
5. Modeling Heavy-Tails in Traffic Sources for Network Performance Evaluation
6. NAS on Odroid
7. SQLite and Realm, performance analysis of mobile databases on Android platform
8. kvm vs lxc at polylan
9. Optimizing The Location Obfuscation In Location-Based Mobile
10. A comparison of Rust and C++
11. Comparison of Matrix Operation Performance between Matlab and Python-Numpy/Scipy
12. Deliberative agents
13. Performance analysis of multi-threading in In-Memory Data-Stores
14. Systems Packet Sampling with Delayed Disclosure
15. Performance of Cartography web application in JavaScript
16. Performance Evaluation of Mersenne arithmetic on GPUs
17. Independence of Packet Losses in Wireless Networks
# Mini-Project: Process

## Phase 1: Project Definition

- Project proposal (one paragraph) posted on Moodle by April 3 at 23:59
- Obtain feedback from me – not graded
- Post your final project definition by April 10

## Phase 2: Project Development 1

- Formal checkpoint (private confession = private slide show, ca. 10 slides) on May 11 or 18 – not graded

## Phase 3: Project Development 2

- Public defense on May 23, 30 and June 1