Your Team

Prof. Jean-Yves Le Boudec, lecturer
Ehsan Mohammadpouri, head TA
Dr Eleni Stai, TA and lecturer

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 head TA
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 + Exercises + Homeworks + Miniproject

Tuesdays 13:15 – 15:00 Lecture
15:15 – 16:00 Paper and pencil exercises

Wednesdays 13:15 – 16:00 Test every second week Followed by 45 mn lecture and by Homework


Paper and pencil exercises in class (not graded) – to improve your theoretical skills; every Tuesday at 12:15 – prep to test

5 Tests (graded) every other week

Mini-project (graded) : your own performance evaluation (based on your own semester, masters, phd project, or papers in the literature)
Grading

One written exam in exam session = $E$
5 short tests every other week on Wednesday at 13:15
$T = \text{average of best 4 tests}$

Average of homeworks = $H$
Mini-project grade = $M$
Final Grade = $(E + T + H + M)/4$

Written exam:
no document allowed except for the exam booklet (see it on moodle) – we print it for you
no electronic equipment except for calculator
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
Only document allowed at tests/exam
(printed – your own copy)
# Outline of the Lecture

<table>
<thead>
<tr>
<th>Lectures</th>
<th>Labs</th>
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<tbody>
<tr>
<td>1. Methodology (today)</td>
<td>L1</td>
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<tr>
<td>2. Confidence Intervals</td>
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<tr>
<td>3. Simulation</td>
<td>L2</td>
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<td>4. Queuing</td>
<td>L3</td>
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<td>5. Model fitting</td>
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<td>6. Forecasting</td>
<td>L4</td>
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<tr>
<td>7. Tests</td>
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<tr>
<td>8. Model fitting 2</td>
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<td>9. Palm Calculus</td>
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Performance Evaluation Mini-Project

Goal = Practice skills of performance analyst

In principle 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)

Size of 2 homeworks
Examples of Past Projects

1. 2D Fourier Series Truncation for Material Modeling
2. Performance of Lossless Compression Methods
3. Performance Evaluation of Graph Libraries in Python
4. Comparison of Three Memory Allocators in a Multi-threaded Setting
5. Comparison of imputation methods
6. Comparing Java and Scala
7. Evaluating “Fairness in Classification”
8. MultiPath TCP
9. Supervised Learning for weather forecasting
10. Multimodal Classification for Analyzing Social Media
11. Performance Evaluation of an approximation algorithm implemented in Spark
12. IP Parallel Redundancy Protocol
13. Performance Evaluation of PriFi - an anonymous communication protocol
14. Beat the market – comparison of two stock exchange algorithms
15. Performance of Estimators vs Graph Structure for Bradley-Terry Models
16. FIR (Finite Impulse Response) on a hybrid SoC
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. SystemsPacket 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) uploaded by you on Moodle by April 3 at 23:55
Obtain feedback from me – not graded
Upload your final project definition by April 10 at 23:55

### Phase 2: project development 1

Formal checkpoint (interim checkpoint = private slide show, ca. 10 slides) on May 1, 8 or 15 – not graded

### Phase 3: project development 2

Public defense on May 21, 22, 28 and 29
# Roadmap – see Moodle for updates

<table>
<thead>
<tr>
<th>Week</th>
<th>18.02.2019</th>
<th>13:15-15:00</th>
<th>15:15-16:00</th>
<th>13:15-14:00</th>
<th>14:15-16:00</th>
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<tbody>
<tr>
<td>1</td>
<td>mardi 19 février</td>
<td>intro /metho</td>
<td>exos</td>
<td>mercredi 20 février</td>
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<td>exos</td>
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