

A vintage map with a yellowish, aged appearance. The map shows various geographical features, including roads, rivers, and place names. Overlaid on the map is the text "MAKE YOUR OWN PATH." in large, bold, red, sans-serif capital letters. The text is arranged in four lines: "MAKE", "YOUR", "OWN", and "PATH.". The background of the map is a light yellow color, and the text is a vibrant red.

**MAKE
YOUR
OWN
PATH.**

ECa: Industrial Development Practices

**Make your own
research work!**

Motivation

- ▶ Academia and Industry are not in silo!
- ▶ Most of software paradigms come from academia
- ▶ Most of software experiences are reported to academia
- ▶ The scientific rigor is expected/appreciated by both academia and industry
 - ▶ Side note: PhD is more and more recognized in the French industry (and since along in most of the foreign countries)
- ▶ Software Engineers must build their own visions

Objective

- ▶ **Technical skills**

- ▶ Learn some software foundations and industrial practices
- ▶ Step back on software technologies and build your own vision
 - ▶ *Think outside the box!*

- ▶ **Soft skills**

- ▶ Discover scientific literature
 - ▶ *A first meet with scientific literature reading for most of you?*
- ▶ Report on scientific contribution

Organization

- ▶ Choose an article/topic and make a group of ~4/5
- ▶ Iterate
 - ▶ Read the reference(s), and make your own path from related work
 - ▶ Brainstorm with your colleagues to confront your vision on the contribution
 - ▶ Extract the essence of the contribution and make your own (group) analysis
 - ▶ Define pro and cons, expected and concrete impact, and perspectives
- ▶ Important note: Let Me Google(*scholar*) It For You 😊
 - ▶ <https://scholar.google.fr>
 - ▶ But also: <https://arxiv.org>, <https://hal.inria.fr>, researcher or lab websites...
 - ▶ And if eventually you look for a scientific paper that you can not access, send me the link of the paywall.

Timeline

- ▶ Monday Oct. 2nd: choice of the article
- ▶ Monday Oct 9th: open hours (during ECc, 14h-16h)
- ▶ Thursday Oct 12th: open hours (during ECb, *moved* to 16h-18h)
 - ⇒ You must validate your presentation outline during the open hours
 - ⇒ You may also use open hours to discuss with your colleagues
- ▶ Wednesday Oct. 18th: presentation (and will serve for the evaluation)

Evaluation

- ▶ A presentation of 15min (+5min discussion) reporting on the topic addressed by the group
 - ▶ Speech can be in French but the slides must be in English
 - ▶ All members of the group may present a part of the presentation, but no more than 1 switch per person
- ▶ Proposed outline in 5 main parts:
 - ▶ **Context:** set the ground of the scientific/technological/industrial field
 - ▶ **Problem:** explain the problem, and position the proposed contribution
 - ▶ **Contribution:** may be a general approach, an architecture overview...
 - ▶ **Results:** may include an evaluation, discussion about pros and cons, reported impact...
 - ▶ **Conclusion and Perspectives:** give your own summary of the contribution, and give (your own) perspective

Topics: <https://combemale.github.io/teaching/ice/m1/eca>

- ▶ Software engineering principles
- ▶ Software Preservation
- ▶ Typing
- ▶ Approximate computing
- ▶ Software modularity
- ▶ Software synthesis