My PhD…
What else?

Luc Bougé
KerData Team
ENS Rennes
How to prepare the day after?

- Your PhD defense… and after
- Choosing a career
- The keys for a successful job strategy
- Applying: Basic steps in France
- Take away
Your PhD defense... and after
PhD defense: Who?

- **PhD registration institution**
  - Not IRISA, not Inria
  - University Rennes 1, INSA Rennes, ENS Rennes, etc.

- **Doctoral School**
  - Organizing and monitoring your PhD work
    - Regular timespan: 36 months
  - Matisse, MathStic
  - CSID: Individual PhD monitoring committee

- **Research laboratory**
  - IRISA, Inria

- **PhD director/supervisor**

- **Research Team**

- **Funding institution**
  - University Rennes 1, Inria, ENS Rennes, etc.
  - Industry-Academy CIFRE Framework
PhD defense: How?

- PhD manuscript
  100-150 pages
  3 years of work

- External reviewers: 2
  - Head of registration institution
  - Doctoral school verification
  - Reports
  - Recommendation for defense
  - One month reading allowance

- Jury: 6 members
  - One month organization and advertising allowance

- Defense
  - 45 minute talk
  - 45 minutes questions

- Private deliberation
  - Scientific validation
  - Manuscript validation
  - Defense report

- Congrats and post-defense celebration!
The day after: What to do?

- Overall objective: Get a permanent position
  - Academia vs. Industry
  - France vs. Europe vs. International
  - Teaching vs. Research

- Academic positions: A long process
  - Shortage of permanent positions
  - In contrast, abundance of fixed/short-term positions
  - Well-defined career, mostly

- Industry positions: Many offers, many pitfalls
  - Moving landscape, unstable strategies, high salaries
  - Gap between what is presented and the actual job
  - Challenge: Remain in a technical job
  - Choice: Make a company or get hired?
To take away

You will get exactly what you planned to get.
Choosing a career
A first view

Long term

Academia

Short term

Industry
Another view

Efficiency

Money

Completeness

Time
Yet another view

Science

Sell

Prove

Technique
Science vs. Technique
Researcher vs. Engineer

- **Engineer**
  - Solve the problems as efficiently as possible
  - Respect the constraints
  - Make it by the deadline
  - Any solution meeting the requirements is right

- **Researcher**
  - Imagine new problems to be solved
  - Provide prototype solutions and demonstrate they (could) work
  - Discuss the validity and the originality
  - Use scientific arguments only
Academia

- Types of positions
  - Teaching positions
    - Universities, schools
  - Research positions
    - Research centers
  - Many kinds of mixed positions

- In most cases, civil servant-like, publicly funded positions
  - Research centers of large IT companies: IBM, Microsoft Research, HP, Google, Facebook, etc.

- Shortage of permanent positions
  - Very competitive, worldwide applications
  - Very tight profiles: IA, Data Science, etc.

- Abundance of fixed-term positions
  - Post-docs: 1-3 years
  - Contract-based: 4-5 years

- Evaluation
  - Research, research, research

Publish or Perish
Industry

- Research and development (R&D)
  - Project funding: 2-3 years
  - Team working
  - Highly decentralized co-operation
  - Though time constraint

- Large panel of companies
  - Big potatoes
    - Legacy: IBM, HP, Bull, EDF, etc.
    - New: Google, Microsoft, Huawei, Technicolor, etc.
  - Startups
    - Rennes Atalante, EIC Digital Rennes, etc.
  - Many IT companies (ESN), all size
    - Capgemini, Atos, Sopra, Orange Business, Accenture, Groupe CGI, GFI Informatique, Econocom, etc.

- Evaluation
  - Deliver, deliver, deliver
Five keys for a successful job strategy
You will be hired because you fit best your recruiter's needs

Earning a good PhD is *not* the question
Key 1: Network

- Know your community
  - Resource persons
  - Decision makers
  - Helpers
  - Success stories and failure stories

- Get known by your community
  - What you have done
  - What you can do
  - What you want to do

- Weave the network methodically
  - Scientific visits
  - Seminars
  - Coffee time
  - Conferences, workshops

*Attending a seminar is an investment*

*Make the most of the conferences*
Key 2: Understand

- Learn the needs of the recruiters
  - Research
  - Teaching
  - Additional skills

- Read, read, read
  - Your recruiter expects you know everything on his/her context

- Listen, listen, listen
  - Take time to interview colleagues and fellows about their applications
  - Not only science, but also scientific strategy

Reading is an investment

Increase your coffee budget
Key 3: Anticipate

- Applying to a position is a one-year task
  - Searching for proposals
  - Taking contact, getting information
  - Meeting people, understanding their needs
  - Building up your application

- PhD is paradise (even though you do not know!)
  - Only one thing to do
  - 3-year security
  - Personal coach just for you 24/7

- After your defense, life starts for real (and it goes too fast)
  - Short-term positions
  - New context, new people, new competitors
  - No time left to make complex learning
  - Skills acquired during PhD will fuel the rest of your scientific life
Key 4: Publish

- Publications are the major factor in application evaluation
  - Not teaching, not code writing, not Web site managing

- Not all publications are equal
  - Number of authors, order of authors
  - Publication venue, specific awards

- Refine your publication strategy explicit
  - Avoid incremental papers
  - Reject any temptation for double submission
  - Get a precise vision of the quality of your work
  - Build your network within a few conferences
  - Make sure to have one journal paper

- Get the most of the reviews
  - Study the reviews with your advisor
  - Take them seriously
  - Your papers must be perfect

Publishing unnecessary papers is as damageable as not publishing at all

Write now
Write again
Write better
Key 5: Get the most of your advisor

- You adviser is paid to advise you
  - Availability
  - Quality of attention
  - Adequacy of strategy

- You are responsible to solicit him/her
  - Plan regular meetings
  - Prepare to make sure to be as efficient as possible
  - Take notes, manage archives, gather all possible material

- You are responsible to anticipate
  - Technical questions
  - Strategic discussions
  - Paper planning

Your submission must be ready 24 hours before the deadline
Applying: Basic steps in France
French qualification

- Applying to an academic teaching position in France
  - Maître de conférences (MC, MCF)
  - Joint Research-Teaching position
  - Teaching load: 6 hours/week

- National University Council
  - Conseil national des universités (CNU)
  - Section 27: Informatics
  - 50 section members
  - Around 3500 lecturers

- Qualification meeting
  - 700 MC applications, 200 PR applications
  - 1 week work for 50 members
  - 2 reviewers per application: 2 pages of review
    - Recommendation: A, B, C, D, X
  - Selection rate: 70%

- Application: Early October, on-line registration
- Defense diploma: Mid December, on-line upload
Qualification application

- Résumé
- Publication list
  - Copy of main papers
- Research activity
  - Summary of scientific achievements
  - Collaborations, seminars, visits
  - International activities
- Teaching activities
  - Summary of teaching assignments
  - Personal achievements
    - Courses, exercise classes, lab classes
    - Project supervision, specific involvements
    - Specific training at Doctoral School
    - Scientific mediation, lectures, etc.
- Additional activities
  - Specific responsibilities, etc.

**Question: Will you be a good candidate for a MC position?**

**Be specific! Only activities with indicators are considered**

**Recommendation letters**
- Department chair
- Research supervisor
- Visited host
Applying to a university position

- Call for applications: February
  - One call for each position in France
  - 100+ different institutions
- Applications due: March
- Step 1: Application selection
  - 5-10 applications
- Step 2: On-site hearing
  - 10-15 minutes presentation
  - 10-15 minutes questions
- Ranking
  - 0-5 names
- Global round-based assignment algorithm
  - On each round, select or resign for each proposed position
- Final result: July

Caution: Difficult exercise
Requires an extensive training
2 weeks of preparation for the hearing
Applying to a research position

- Research-only position
  - Inria, CNRS, etc.
  - 10-15 positions each year at the national level
- No qualification needed
- Fully international competition
- Procedure
  - Step 1: Application selection
  - Step 2: On-site hearing
- Final selection
  - Major role of the hiring institution
Applying to an industry position

- Permanent vs. fixed-term
- Completely dependent on the context
  - Country, region
  - Large group vs. startup
  - International competition vs. local visibility
  - Major variable: application pressure
    - Big Data software engineer, statistics data scientist, etc.

- Preliminary choice
  - Mobility
  - Salary
  - Adaptability

Make it very clear right from the beginning
Applying to a post-doc position

- Very large number of positions
  - No integrated framework
  - Little official information
  - Mostly through personal relationship
    - PhD advisor, PhD fellows
  - In most cases, low application pressure

- Personal contact definitely needed
  - On-site or remote interview
  - Preparation: read some papers to comment them
  - Salary negotiation
    - Rather limited in France, but qualification level adjustable

- Major difficulty: Run a professional negotiation process
  - Little training in French PhD curriculum
  - Applicant reliability vs. recruiter reliability

Be professional!
CONGRATS!

on your success

And now?
Your career will be just as successful as your PhD

Manage your PhD as you will manage your career

Know your recruiters

Make yourself adaptable

Step out of the pack

Disregard local applications!

CONGRATS! on your success