Courau Philibert

M.S. Probability and Random Models

http://www.normalesup.org/~pcourau/

Course	College/University	Year	Mention
Ongoing PhD	ENS-PSL, Wien Universität	2022-25	
M.S. Probabilité et Modèles Aléatoires (Probability and Random Models)	ENS-PSL	2020-21	Très bien
Master 1 Imalis (Life sciences)	Sorbonne Université	2018-19	
Licence de Biologie	ENS-PSL	2017-18	
Diplôme de l'ENS	ENS-PSL	2017-22	
BCPST (biology preparatory class)	Lycée Henri IV	2015-17	
High School	Louis-le-Grand	2012-15	Très bien

SCHOLASTIC ACHIEVEMENTS

- Secured **1st rank** in Polytechnique entrance exam (biology section) [2017]
- Secured **3rd rank** in ENS Paris entrance exam (biology section) [2017]

WORK EXPERIENCE

- **TA | Sorbonne Université** [Sept'23-Jan'24]
  - TA for Maths LU1MA001, two groups of 25 undergraduate students.
- **TA | BCPST Henri IV** [Sept'17-Jan'18]
  - Gave three "khôlles" (tutoring) in mathematics (undergraduate level).

SKILLS & INTERESTS

- **Programming Languages**: Python, R, C++
- **Tools & Libraries**: Scipy, Matplotlib, ggplot2,lem4, LaTeX
- **Interests**: Probability, Evolution, Genetics, Polygenic adaptation, Quantitative genetics, Adaptation
- **Languages**: French (native), English (fluent), German (good), Chinese (rudimentary), Esperanto (rudimentary)

PROJECTS

- **PhD in Probability/Evolutionary genetics | Amaury Lambert, Emmanuel Schertzer** [Oct'22-Oct'25]
  - Individual-based models for quantitative genetics
  - Mean-field equations, propagation of chaos, McKean-Vlasov equations, entropy production, Python simulations.
- **Evolution of transgenerational bet-hedging plasticity | Luis-Miguel Chevin | CEFE, Montpellier** [Oct'21-Jan'22]
  - Study of a population evolving in a quantitative genetics setting with plasticity, bet-hedging and plastic bet-hedging in a random environment
  - Python simulations, Ornstein-Uhlenbeck processes
- **The evolution of a natural population from the genealogies | Amaury Lambert | Collège-de-France, Paris** [Feb'20-Jun'20]
  - Suggested a quantitative genetics model for a finite population with random size
  - Modelling with Poisson point processes
- **Impact of phenotypic mutations on in silico evolution | Troy Day | Queen's University, Kingston, Ontario** [Apr'19-Jun'19]
  - Obtained a look-ahead effect of phenotypic evolution in Avida
  - *in silico* simulations in C++
- **Long-term impact of ectoparasites on blue tit nests | Céline Teplitsky | CEFE, Montpellier** [Jun'18-Aug'18]
  - Demonstrated correlation between parasitic load on fledgling and adult feather colour
  - Data analysis. Multilinear mixed models with R packages lme4 and ggplot2

RELEVANT COURSES

- **Poisson processes/Lévy processes | Stochastic calculus | Markov Chains | Limit Theorems | Statistics |** [Graduate]
- **Evolutionary genetics | Evolution | Mathematics for biology | Genomes-Phenotypes | Biology of ecological systems |** [Graduate]
- **Statistical mechanics | Topology | Integration and probability theory | Modelling |** [Undergraduate]