# Max Halford

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## EDUCATION

**PhD in Mathematics and Computer Science – Université Paul Sabatier**  *2017–2020*

— Title : *Machine learning for query selectivity estimation in relational databases*
— Published work on Bayesian networks and online machine learning
— Taught data science and database classes to undergraduates and graduates, supervised end-of-year projects.

**MSc. Mathematics – Université Paul Sabatier**  *2014–2017*

— Data analysis
— Data engineering
— Big data
— Machine learning
— Business intelligence
— Software engineering

**Mathematics Associate Degree – Toulouse School of Economics**  *2012–2014*

— Real analysis
— Linear algebra
— Microeconomics
— Quantitative finance

## WORK EXPERIENCE (3 PREVIOUS POSITIONS)

**HelloFresh – Berlin**  *02/2017–07/2017*

— Machine learning applied to churn and customer lifetime metrics
— Collaborative filtering for recommending recipes to customers on a weekly basis
— Fraud prevention by detecting duplicate accounts
— Instigation and maintenance of data pipelines on AWS

**Privateaser – Paris**  *04/2016–09/2016*

— Full stack web development (Flask, ES6, LESS, SQL) to support a marketplace
— Helped transfer towards an onion/micro-service architecture
— Sprint/features/AGILE development workflow
— Contributed to building a data management and analysis pipeline

**INSA Mathematics Department (GMM) – Toulouse**  *04/2015–07/2015*

— Probabilistic modeling of population growth with continuous Markov Chains
— Development of a genetic algorithm to estimate model parameters
— Software development and testing in `Python`

### Open source software

I develop and maintain various open source projects related to data science. In particular, I actively maintain creme, which is a Python library for online machine learning. I have also developed a toolkit for evolutionary algorithms called eaopt and a factor analysis library called prince. I also have a personal machine learning toolkit called xam.

### Kaggle competitions

I'm a Kaggle Master and was ranked in the top 250 across the world. I enjoy competitive data science and I find it to be a great way to sharpen my skills.

### Consulting and teaching

I occasionally do consulting work related to data science. Mostly I write machine learning exercises and teach data science courses. I also advise on machine learning project architectures. In general I enjoy teaching, whether it be as a TA at university or in a consultant position.

## SKILLS

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|---:|---|
| **Programming** | Very experienced in `Python`, `JavaScript`, and `Go`. |
| **Databases** | Strong knowledge of relational databases ; experience with NoSQL. |
| **Data analysis** | Numerous case studies done during university projects, internships, and competitions. |
| **Machine learning** | Solid theoretical knowledge of the mathematical concepts and hands-on experience. |
| **Cloud** | Knowledgeable in the Azure and AWS cloud stacks. |
| **Web** | Hands-on practice of "modern" JavaScript (React, Vue.js, Webpack, etc.) |
| **Code quality** | Healthy habits regarding coding conventions, documentation, and testing. |
| **Writing** | Keen interest in making documentation and writing blog posts. |
| **Languages** | Fluent in English and French. Proficient in Spanish. |

## DISTINCTIONS

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|---|---:|
| **Finalist of the International Data Analysis Olympiads (IDAO)** | *2020* |
| **Finalist of the Data Science Games** | *2018* |
| **Winner of « *DataConnexions* », a national open data competition** | *2016* |
| **Regional mathematics prize winner at middleschool and highschool** | *2009, 2011, 2012* |

## SELECTED TALKS

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|---|---:|
| **Toulouse Data Science Meetup** | *28/05/2019* |
| **PyData Amsterdam 2019** | *11/05/2019* |
| **Toulouse Data Science Meetup** | *22/03/2016* |

## HOBBIES

- Modern art
- Running
- Cooking
- Reading
- Programming
- Travelling