

# Aladin VIRMAUX

Machine Learning Scientist

☎ (+33) 06 75 19 65 63  
✉ [aladin.virmaux@gmail.com](mailto:aladin.virmaux@gmail.com)  
📖 <https://avirmaux.github.io>  
👤 Github: [avirmaux](#)  
👤 married, one daughter  
🗣️ French (native), English

## PROFESSIONAL EXPERIENCE

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### Senior Machine Learning Research Scientist – Huawei 2017 – present

*Noah's Ark lab*: cross-disciplinary laboratory on fundamental research that tackles the most challenging research and engineering problems of the company

▷ **Research**: Research topics close to the industrial projects: optimization, deep learning, ML for structured data and graphs, transfer learning, time-series, causality and LLMs.

[Publications](#) and reviews in top-tier ML conferences.

Co-supervised one PhD student and 3 interns

▷ **Development**: very high impact ML topics in collaboration with different *business units*:

- *Telecommunication problems*: optimization of base stations efficiency (user and business oriented), traffic prediction for a grid of base-stations at the scale of a city.

(Deep learning, LSTM, time-series forecasting, missing data management, anomaly detection)

- *Signal*: improvement of signal decoding out of optical amplifiers, online statistical packet analysis for datacenter maintenance.

(Deep learning, CNNs, VAE, importance sampling, optimization on sample quantity)

- *Global Technical Service*:

Failure prediction and identification on networks at the scale of cities.

(Attention mechanism, transformers, time-series, domain adaptation, transfer learning)

Modelization, detection and prevention of failures in car batteries.

(time-series classification, battery modelization, optimization, anomaly detection, explainable ML)

▷ **Lead**: Successfully tackled projects involving a team of international scientists from problem definition to solution. Project timelines ranking from 2 months to 2 years: from rigorous definition of the problem and metrics, to planning and efficient work toward the final delivery.

**3 patents** as first author.

*Many complex and high impact projects are today running in production.*

### Doctoral Researcher – Université Paris-Sud 2012 – 2016

▷ **Research**: algebraic combinatorics (representation theory of monoids)

Invited researcher at Brown University (2012, 3 months) and UC Davis (2013, 3 months)

▷ **Software development**: Sagemath (free and open source mathematical software)

▷ **Teaching**: (~ 400 h) all university levels in programming and theoretical computer science

## EDUCATION

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### PhD in *Computer Science* – Université Paris-Sud 2012 – 2016

Representation theory of tower of monoids – Under the supervision of Nicolas M. Thiéry

### Master in Fundamental Mathematics – Université Paris-Sud 2011 – 2012

Algèbre - Analyse - Géométrie

### Agrégation in Mathematics (rank 95<sup>th</sup>) – specialization Computer Science 2011

French yearly competitive examination for high level teaching.

## SKILLS

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- ▷ Machine learning: theory and practice, deep learning, domain adaptation, LLMs engineering, ...
- ▷ Accomplished in presenting highly technical work to any type of audience
- ▷ Proficient in working with international and interdisciplinary teams.

## HOBBIES

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- ▷ puzzles, tabletop RPG, music (piano), literature, sports (cycling, running, hiking)