



# Antoine Honoré, PhD

## TLDR

Researcher with strong experience at the intersection of AI, biology and medicine. I have designed deep generative models for sepsis prediction in preterm infants. My current research focuses on multimodal data integration: protein structures, deep mutational scans and multiple sequence alignments, for variant effect prediction in drug transporter proteins.

## RESEARCH

**Postdoctoral Fellow** | November 2023 –

*Advancing AI in biology research with the department of physiology and pharmacology, Karolinska Institutet*

*Key contributions*

- Design of large scale & novel deep learning architectures for multiple sequence alignment and deep mutational scans data
- Establishing benchmarks in protein variants effect predictors
- Conducting scientific research, student mentoring

**Associated researcher** | May 2023 –

*Conducting and performing retrospective clinical studies with the [neonatal transfusion network](#): Oxford, Charité Berlin, Karolinska Institutet*

## EDUCATION

**Ph.D. Machine Learning and Biomedical Data** | 2023

*KTH Royal Institute of Technology, Stockholm, Sweden*

Thesis: [“Perspectives of Deep Learning for Neonatal Sepsis Detection”](#)

*Key outcomes*

- AI/ML models for clinical decision support systems and the analysis of bedside monitoring time series
- Scientific publications (URL: [Google Scholar](#)), conference talks/posters (ICASSP, NIPS2017), invited talks (RISE, TU Eindhoven).
- Data integration pipeline for secure and efficient data querying, parsing and analysis from hospital database (URL: [Github](#), [Gitlab](#))

**Double M.Sc. Electrical Engineering** | 2017

*Grenoble INP-Phelma, Grenoble, France*

*& KTH Royal Institute of Technology*

Majors: Signal Processing, Optimization, Machine learning.

**Classe Préparatoire aux Grandes Ecoles (MPSI – MP)** | 2013

*Lycée Victor Grignard, Cherbourg, France*

Majors: Mathematics and Theoretical Physics.

## SHENANIGANS

- Improv theater, tennis, running
- Reading: sociology, economy

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## SKILLS HIGHLIGHT

### Machine learning

- i. Design, training, evaluation of custom deep learning models
- ii. Deep generative AI models (VAE, Normalizing flows)
- iii. Sequence models (RNN, HMM, Transformers)
- iv. Theory and practice of signal processing, convex optimization

### Biomedical AI

- i. Clinical decision support from **bedside time series**
- ii. Variant effect prediction from **multimodal data**

### Soft skills

- i. Interdisciplinary collaboration in AI, biology and medicine
- ii. Teaching, supervising, mentoring in research environment

### Programming

- iii. Python (pandas, numpy, sklearn, **torch+cuda**, lightning),
- iv. PostgreSQL, Rust, Powershell, **GNU/Linux**, git, bash.

## LANGUAGES

- i. English – Fluent
- ii. French – Native
- iii. Swedish – Basic