Antoine Honoré, Ph.D.

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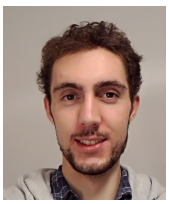

Research Area

My research focuses on the design of prediction models contributing to more reliable and trustworthy predictions for biomedical problems. This encompasses the interplay between practical and theoretical aspects of predictive modeling. I am also interested in enabling health informatics research with information systems integrating various sources of data generated in clinics.

Education

2018 – 2023 **Ph.D., KTH Royal Institute of Technology, Stockholm, Sweden**
AI in Biomedical Engineering.
Thesis title: *Perspectives of Deep Learning for Neonatal Sepsis Detection*

2013 – 2017 **M.Sc. Grenoble INP PHELMA, Grenoble, France** in Electrical Engineering.
Double degree with KTH Royal Institute of Technology, Stockholm, Sweden.
Majors: *Signal Processing, Optimization.*.

2011 – 2013 **CPGE, Lycée Victor Grignard, Cherbourg, France**
Majors: *Mathematics and Theoretical Physics*.

Research Publications

Journal Articles

1. A. M. Stålhammar, **A. Honoré**, K. Adolphson, D. Forsberg, E. Herlenius, and K. Jost, "Weight a minute: The smaller and more immature, the more predictable the autonomic regulation?" *Acta Paediatrica*, vol. n/a, no. n/a, ISSN: 1651-2227. DOI: 10.1111/apa.16796. (visited on 05/02/2023).

2. **A. Honoré**, D. Forsberg, K. Adolphson, S. Chatterjee, K. Jost, and E. Herlenius, "Vital sign-based detection of sepsis in neonates using machine learning," *Acta Paediatrica*, vol. n/a, no. n/a, Jan. 2023, ISSN: 1651-2227. DOI: 10.1111/apa.16660. (visited on 02/24/2023).

3. E. Persad, K. Jost, **A. Honoré**, *et al.*, "Neonatal sepsis prediction through clinical decision support algorithms: A systematic review," *Acta Paediatrica*, vol. 110, no. 12, pp. 3201–3226, 2021, ISSN: 1651-2227. DOI: 10.1111/apa.16083. (visited on 04/11/2022).

Conference Proceedings

1. A. Ghosh, **A. Honoré**, and S. Chatterjee, "DANSE: Data-Driven Non-Linear State Estimation of Model-Free Process in Unsupervised Bayesian Setup," in *2023 31st European Signal Processing Conference (EUSIPCO)*, Sep. 2023, pp. 870–874. DOI: 10.23919/EUSIPCO58844.2023.10289946. (visited on 11/15/2023).

2. **A. Honoré**, A. Ghosh, and S. Chatterjee, "Compressed Sensing of Generative Sparse-Latent (GSL) Signals," in *2023 31st European Signal Processing Conference (EUSIPCO)*, Sep. 2023, pp. 1918–1922. DOI: 10.23919/EUSIPCO58844.2023.10289923. (visited on 11/15/2023).

3. **A. Honoré**, H. Siren, R. Vinuesa, S. Chatterjee, and E. Herlenius, "An LSTM-based Recurrent Neural Network for Neonatal Sepsis Detection in Preterm Infants," in *2022 IEEE Signal Processing in Medicine and Biology Symposium (SPMB)*, Dec. 2022, pp. 1–6. DOI: 10.1109/SPMB55497.2022.10014948.

4. A. Ghosh, **A. Honoré**, D. Liu, G. E. Henter, and S. Chatterjee, "Robust Classification Using Hidden Markov Models and Mixtures of Normalizing Flows," in *2020 IEEE 30th International Workshop on Machine Learning for Signal Processing (MLSP)*, Sep. 2020, pp. 1–6. DOI: 10.1109/MLSP49062.2020.9231775.

5. **A. Honoré**, D. Liu, D. Forsberg, *et al.*, "Hidden Markov Models for Sepsis Detection in Preterm Infants," in *ICASSP 2020 - 2020 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, May 2020, pp. 1130–1134. DOI: 10.1109/ICASSP40776.2020.9054635.

6. D. Liu, **A. Honore**, S. Chatterjee, and L. K. Rasmussen, "Powering Hidden Markov Model by Neural Network based Generative Models," in *24th European Conference on Artificial Intelligenc*, Santiago de Compostela, Spain, 2020, p. 8. DOI: arXiv:1910.05744.

7. **A. Honoré**, V. Siljehav, S. Chatterjee, and E. Herlenius, "Large Neural Network Based Detection of Apnea, Bradycardia and Desaturation Events," in *NIPS ML4H 2017*, Long Beach Convention Center, Long Beach, CA.: arXiv, Nov. 2017. DOI: 10.48550/arXiv.1711.06484. (visited on 02/05/2024).

Books and Chapters

1. D. Forsberg, **A. Honoré**, K. Jost, *et al.*, "AIM in Neonatal and Paediatric Intensive Care," in *Artificial Intelligence in Medicine*, N. Lidströmer and H. Ashrafian, Eds., Cham: Springer International Publishing, 2020, pp. 1–10, ISBN: 978-3-030-58080-3. DOI: 10.1007/978-3-030-58080-3_309-1. (visited on 02/05/2024).

Employment

2023 – 2025 **Postdoc,** KTH Royal Institute of Technology, Stockholm, Sweden.
Project: Predicting Chemotherapy Sensitivity using Graph Neural Networks Based on Deep Mutational Scanning

2017 – 2018 **Research assistant,** Karolinska Institutet, Stockholm, Sweden.

Talks & Presentations

Seminars & Workshops

Nov. 2023 Visit at Biomedical Diagnosis lab, Eindhoven University of Technology, The Netherlands. **Invited talk**.

Oct. 2022 "Health-related data and machine learning algorithms for healthcare". RISE Research Institutes of Sweden, Stockholm. **Invited speaker**.

Nov. 2019 "Hidden Markov Models for Sepsis Detection in Preterm Infants". Digitalize in Sthlm. **Poster**.

Conferences

Sept. 2023 "Compressed sensing of generative sparse-latent (GSL) signals", European Signal Processing Conference. **Poster**.

Dec. 2022 "An LSTM-based Recurrent Neural Network for Neonatal Sepsis Detection in Preterm Infants". 2022 IEEE Signal Processing in Medicine and Biology Symposium. **Talk (online)**.

May. 2022 "Hidden Markov Models for Sepsis Detection in Preterm Infants". 2022 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP). **Poster (online)**.

Dec. 2017 "Large Neural Network Based Detection of Apnea, Bradycardia and Desaturation Events". NIPS ML4H 2017, Long Beach Convention Center, Long Beach, CA. **Poster**.

Skills

Programming	Python (pandas, numpy, sklearn, pytorch+cuda, lightning), Rust, C
Systems	GNU/Linux, Bash, Powershell, Singularity
Databases	PostgreSQL

Miscellaneous

Teaching Assistant

2018 – 2019	Pattern Recognition and Machine Learning (Spring)
2020 – 2023	Speech and Audio Signal Processing (Spring)
2021 – 2022	EP232U: Deep Neural Networks, Industry course. (Spring)
2022	Machine Learning and Data Science (Fall)

Student Supervision

2023	Laura Briffa (KTH), co-supervisor
	Alma Nordenstam (KI), co-supervisor
	Rongfei Pan (Industry-KTH), co-supervisor
	Sarah Reichhuber (KTH), main-supervisor
2022	Henrik Siren (KTH), main-supervisor
	Carolin Danker (KTH), co-supervisor
2020	Lila van Breugel (Monash University, Australia), co-supervisor
	Jintai Liu (KI), co-supervisor
2019	Hanna Olsson (KI), co-supervisor

Research Programs & Grants

2023 – 2025	Postdoc funding *WASP-DDLS*
2018 – 2023	Doctoral Program *KTH Digital Futures*
	Graduate School *MedBioInfo*
2015	Mobility Grant *Grenoble INP PHELMA/Région Rhône-Alpes*

Academic Review Services

Conference	ICASSP, EUSIPCO
Journal	Nature communications, Acta Paediatrica.

References

Available on Request