Antoine Honoré, Ph.D.

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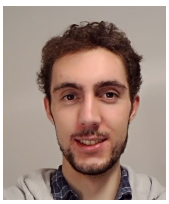

Research Area

- My research focuses on the design of prediction models contributing to more reliable and trustworthy predictions in clinical contexts. 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