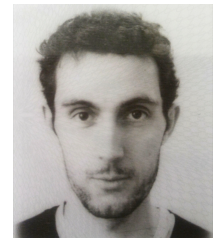


# Antoine Honoré, Ph.D.






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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 for medical diagnostics.  
Thesis title: *Perspectives of Deep Learning for Neonatal Sepsis Detection*.
- 2013 – 2016     **M.Sc. Grenoble INP PHELM, 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*.



## Employment

- 2023 – 2025     **Postdoc**, KTH Royal Institute of Technology, Stockholm, Sweden.  
Project: Predicting Chemotherapy Sensitivity using Graph Neural Networks Based on Deep Mutational Scanning
- 2023 –         **Associated researcher**, Karolinska Institutet, Stockholm, Sweden.  
Project: Conducting and performing retrospective clinical studies with the neonatal transfusion network: Oxford, Charité Berlin, Karolinska Institutet
- 2016 – 2018     **Research assistant**, Karolinska Institutet, Stockholm, Sweden.








## Research Publications

### Journal Articles



- 1 J. Bodlund, A. Wimmerdahl, **A. Honoré**, K. P. Härenstam, and D. Forsberg, “A retrospective evaluation of SwePEWS use in paediatric patients with COVID-19 and RSV infection,” *Acta Paediatrica*, vol. n/a, no. n/a, ISSN: 1651-2227.  DOI: 10.1111/apa.17450. (visited on 10/07/2024).
- 2 A. Ghosh, **A. Honoré**, and S. Chatterjee, “DANSE: Data-driven Non-linear State Estimation of Model-free Process in Unsupervised Learning Setup,” *IEEE Transactions on Signal Processing*, pp. 1–14, 2024, ISSN: 1941-0476.  DOI: 10.1109/TSP.2024.3383277. (visited on 04/02/2024).
- 3 **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).

- 4 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. 112, no. 7, pp. 1443–1452, 2023, ISSN: 1651-2227.  DOI: 10.1111/apa.16796. (visited on 05/06/2024).
- 5 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. Honoré**, S. Chatterjee, and L. K. Rasmussen, "Powering Hidden Markov Model by Neural Network based Generative Models," in *24th European Conference on Artificial Intelligence*, 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).




## Book Chapters

- 1 **A. Honoré**, H. Siren, R. Vinuesa, S. Chatterjee, and E. Herlenius, "Deep Recurrent Architectures for Neonatal Sepsis Detection from Vital Signs Data," in *Machine Learning Applications in Medicine and Biology*, A. Ahmed and J. Picone, Eds., Cham: Springer Nature Switzerland, 2024, pp. 115–149, ISBN: 978-3-031-51893-5.  DOI: 10.1007/978-3-031-51893-5\_5. (visited on 05/06/2024).
- 2 D. Forsberg, **A. Honoré**, K. Jost, *et al.*, "AIM in Neonatal and Paediatric Intensive Care," in *Artificial Intelligence in Medicine*, N. Lidströmer and H. Ashrafi, 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).





## Talks & Posters

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### 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.**

## Computer Skills


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





## Miscellaneous

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### Committee Work

- Oct. 2024 – Feb. 2025     Member of the Scientific Program Committee for the 2nd Digital Futures Young Scientist Conference.

### Teaching Assistant




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

### Student Supervision





- 2024     Catherine Weldone (KTH / Stanford medicine), co-supervisor.
- 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.

## Miscellaneous (continued)



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

## Academic Review Services

- Conference     ICASSP, EUSIPCO.
- Journal         Nature communications, Acta Paediatrica.

## References

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Available on Request