Neil Scheidwasser

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A highly motivated and scientifically inclined researcher in Health Data Science and AI. My expertise includes developing robust software (Rust, Python) and analysing complex and diverse biological and audio datasets. I thrive in fast-paced and diverse teams, as evidenced by co-leading data analysis for COVID-19 epidemiology, developing machine learning models for emergency triage, and using video AI to detect infection in poultry.

Skills

Software engineering	**Agile** development, **Version control** (Git), **unit testing**, **CI/CD** (GitHub Actions)
Programming	**Python** (Proficient), C++, Rust, R (Familiar)
Data science	**Deep learning** (PyTorch, Jax), **Data visualisation** (Plotly, Dash), **DataOps** (DVC), **MLOps** (Weights & Biases, MLFlow, FastAPI)
Soft skills	**Project management**, **critical thinking**, **communication** (presentations at conferences, teaching, scientific writing), **leadership** (supervising internships, managing conference reviewers)

Experience

Oct 2025 – Mar 2026 — **Research Assistant,** University of Copenhagen,
- Continued development of **Phylo2Vec**.
- Indo-European speech evolution through space and time.
- Advised PhD students on computer vision and animal tracking methods.

Oct 2022 – Oct 2025 — **Doctoral researcher,** University of Copenhagen,
- Developed **Phylo2Vec**, a high-performance software package in **Rust** for manipulating **phylogenetic** trees.
- Designed experiments and **tracking** worfklows to **detect infections in poultry** using **video** data and **deep learning**.
- Provided technical leadership in **data analysis** and **software management** for a team investigating the epidemiological spread of **COVID-19** in Denmark using **genomic sequences** and **national registers**.
- Co-wrote recommendations on the usage of AI in infectious disease modelling, published in ***Nature***.
- **Represented PhD students** in discussions on curriculum development and programme policy. Co-organized the GRASPH Summer School in 2025.

May 2025 – Jun 2025 — **Visiting researcher,** Imperial College London.
- Analysed how data from **protein structures** could complement current approaches to study **viral evolution**, using coronaviruses as an example.

Nov 2023 – Dec 2023 — **Consultant,** The Capital Region of Denmark.
- Identified a cost-effective alternative for patient triage using **machine learning** and **physiological data** from **urgent care centres** in Zealand.

Oct 2021 – Feb 2023 — **Scientific advisor,** Logitech.
- Supervised interns on projects related to speech representation learning

Feb 2022 – Sep 2022 — **Research assistant,** EPFL.
- Designed graphical user interfaces (GUIs) for animal tracking to help wet-lab neuroscientists in their experiments.

Feb 2021 – Sep 2021 — **Engineering intern,** Logitech.
- Benchmarked **deep learning** models for **speech emotion recognition** and developed a state-of-the-art **Transformer** model using self-supervised learning. Published in a machine learning conference.

Research Publications (selected)

Full list available on Google Scholar. *: Equal contribution

1. Artificial intelligence for modelling infectious disease epidemics
M. U. Kraemer, J. L.-H. Tsui, S. Y. Chang, S. Lytras, M. P. Khurana, S. Vanderslott, S. Bajaj, **N. Scheidwasser**, J. L. Curran-Sebastian, E. Semenova, *et al.*
Nature, 2025

2. Deep learning from videography as a tool for measuring infection in poultry
N. Scheidwasser, L. Ladefoged Poulsen, M. P. Khurana, M. Iglesias-Carrasco, D. J. Laydon, C. A. Donnelly, A. M. Bojesen, S. Bhatt, and D. A. Duchêne
Royal Society Open Science, 2025

3. High-resolution epidemiological landscape from ∼ 290,000 SARS-CoV-2 genomes from Denmark
M. P. Khurana*, J. Curran-Sebastian*, **N. Scheidwasser***, C. Morgenstern, M. Rasmussen, J. Fonager, M. Stegger, M.-H. E. Tang, J. L. Juul, L. A. Escobar-Herrera, *et al.*
Nature Communications, 2024

4. Phylo2Vec: a vector representation for binary trees
N. Scheidwasser*, M. J. Penn*, M. P. Khurana, D. A. Duchêne, C. A. Donnelly, and S. Bhatt
Systematic Biology, 2024

5. SERAB: A multi-lingual benchmark for speech emotion recognition
N. Scheidwasser, M. Kegler, P. Beckmann, and M. Cernak
International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2022

Education

Oct. 2022 – Jan. 2026	**Ph.D., University of Copenhagen** in Health Data Science and AI Affiliated with Imperial College London and Statistics Denmark
2019 – 2022	**M.Sc. , EPFL** in Life Sciences Engineering (Distinction)
2016 – 2019	**B.Sc. , EPFL** in Life Sciences Engineering

Other interests

A Byte of Health	Newsletter dissecting the latest breakthroughs in science and medicine
Volunteering	Treasurer at ESN Copenhagen (2023-2025). Co-founder of Data Analytics Group at EPFL (2020-2022), where I created science coding challenges
Hobbies	Running, climbing, Scrabble (Under-18 French World Champion in 2015), chess