

Erik Hartman

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Personal Profile

I'm a PhD student in bioinformatics, and have a passion for research and science. In my studies, I specialized in data-science and computational biology, and published peer-reviewed articles parallel to studying at a faster pace than expected (150%). My research mainly revolves around creating and utilizing computational methods for the analysis of omics data.

For more information, please see my personal website: <https://erikhartman.github.io/>.

Academic Awards

2024	EMBO Fellowship Exchange Grant , Personal stipend for travel exchange (9.000 €).	Heidelberg, Germany
2024	Anders Wall Scholarship for Young Scientists , Most prestigious award for a researcher under the age of 25 in Sweden (20.000 €). Awarded for academic and personal excellence.	Stockholm, Sweden
2021	Best BSc thesis , Clinical innovation (1.000 €)	Lund, Sweden
2019	Gold medal , international Genetically Engineered Machine (iGEM)	Boston, USA
2018	3rd place , Intel ISEF, category of translational medicine	Pittsburgh, USA
2018	1st place , National Science Competition for Young Scientists (Unga Forskare)	Stockholm, Sweden
2018	High school awards , Highest achiever in biology, best high school scientific project, and high grades.	Lund, Sweden
2015	Lower education awards , Highest achiever in chemistry and psychology, and awarded for extraordinary general accomplishments.	Singapore

First-authored publications

Peptide clustering enhances large-scale analyses and reveals proteolytic signatures in mass spectrometry data	Nature Communications
Hartman E., Forsberg F., Kjellström S., Petrlova J., Luo C., Scott A., Puthia M., Malmström J., Schmidtchen A. • DOI: https://doi.org/10.1038/s41467-024-51589-y	2024
Interpreting biologically informed neural networks for enhanced biomarker discovery and pathway analysis	Nature Communications
Hartman E., Scott A., Malmström L., Malmström J. • DOI: https://doi.org/10.1038/s41467-023-41146-4	2023
Bioinformatic Analysis of the Wound Peptidome Reveals Potential Biomarkers and Antimicrobial Peptides	Frontiers in Immunology
Hartman E., Wallblom K., Kjellström S., Schmidtchen A. • DOI: https://doi.org/10.3389/fimmu.2020.620707	2021
Peptimetric: Quantifying and Visualizing Differences in Peptidomic Data	Frontiers in Bioinformatics
Hartman E., Mahdavi S., Kjellström S., Schmidtchen A. • DOI: https://doi.org/10.3389/fbinf.2021.722466	2021

Other publications

Other selected publications.

Explainable machine learning for the identification of proteome states via the data processing kitchen sink	bioRxiv
Scott, Aaron M. and Hartman, Erik and Malmström, Johan and Malmström, Lars • DOI: http://dx.doi.org/10.1101/2023.08.30.555506	2023

Generalized precursor prediction boosts identification rates and accuracy in mass spectrometry based proteomics

Nature Communications Biology

Scott, Aaron M. and Karlsson, Christofer and Mohanty, Tirthankar and Hartman, Erik and Vaara, Suvi T. and Linder, Adam and Malmström, Johan and Malmström, Lars

2023

• DOI: <http://dx.doi.org/10.1038/s42003-023-04977-x>

Selective protein aggregation confines and inhibits endotoxins in wounds: Linking host defense to amyloid formation

iScience

Petrlova, Jitka and Hartman, Erik and Petruk, Ganna and Lim, Jeremy Chun Hwee and Adav, Sunil Shankar and Kjellström, Sven and Puthia, Manoj and Schmidtchen, Artur

2023

• DOI: <http://dx.doi.org/10.1016/j.isci.2023.107951>

Education

Faculty of Engineering, Lund University

Lund, Sweden

MSc with a focus on computational biology

Sept 2021 - Oct 2022

- Finished the 5 year program in 4 years, as I was routinely studying at a faster pace than expected.
- **Relevant courses:** advanced algorithms, modelling of biological systems, stochastic systems, Monte Carlo simulations, image analysis.

Faculty of Engineering, Lund University

Lund, Sweden

BSc in Biomedical Engineering with extra courses molecular biology

Sept 2018 - June 2021

- **Courses:** The courses in my bachelors range from calculus, thermodynamics and programming to cell biology, human physiology and design-theory.
- Parallel to my studies at LTH, I also joined the medical faculty to study biomedicine for a year.

Relevant Work Experience

PhD student

Lund, Sweden

Medical faculty, Lund University

2024 - Present

- I am conducting a PhD in the field of computational biology, with a focus on computational methods to understand protein degradation for diagnostic and therapeutic potential.

Researcher

Lund, Sweden

Medical faculty, Lund University

2020 - 2024

- I've been conducting research in different groups at the department of infection medicine at Lund University. After finishing my MSc I was hired as a lab engineer at the **infection medicine proteomics** lab.
- **Skillset:** programming (various languages), mass spectrometry, omics, machine learning, graph theory, game theory, statistics, data visualization.

Machine learning developer

Lund, Sweden

Qlucore

Feb 2023 - July 2023

- Qlucore develops software for the analysis of omics data. I've joined the team to implement machine learning algorithms into the software.
- **Skillset:** Python, C++, machine learning, git.

Bioinformatic consultant

Malmö, Sweden

Dianovator

Apr 2022 - June 2022

- Dianovator develops algorithms for advanced insulin pumps. I helped them implement a summary report system for their software.
- **Skillset:** Python, MySQL, general data analysis and visualization.

Tutor

Lund, Sweden

LTH & elsewhere

2019 - 2022

- Throughout my studies I've worked as a tutor - private as well as at LTH as a lecturer. My private tutoring was mainly in mathematics at both a high-school and university level. At LTH I lectured, as well as created and supervised computer exercises in the course *Data-driven Health (BMEN35)*.

Review Missions

Nature Communications (1), Scientific Reports (1)

References available upon request.