Erik Hartman

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Personal Profile

I hold an MSc in biomedical engineering, 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. My research mainly revolves around creating and utilizing computational methods for the analysis of omics data. Lately, I've dove deeply into machine learning algorithms and their application in understanding complex diseases.

As I've now finished my MSc, I'm looking for a PhD position to continue pursuing my passion for science and research.

Education

LTH, 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 (& medical image analysis).

LTH, Lund University — *Lund, Sweden*

BSc in Biomedical Engineering — *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.

Academic Awards

2021	**Best thesis**, Clinical innovation (Klinnovation)	*Lund, Sweden*
2019	**Gold medal**, interntational Genetically Engineered Machine (iGEM)	*Boston, USA*
2018	**3rd place**, Intel ISEF, category of translational medicine	*Pittsburgh, USA*
2018	**1st place**, National Science Comptetion 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 pshychology, and awarded for extraordinary general accomplishments.	*Singapore*

Publications

Interpreting biologically informed neural networks for enhanced biomarker discovery and pathway analysis — *bioRXiv (currently in review)*

Hartman E., Scott A., Malmström L., Malmström J. — *2023*

- DOI: `https://doi.org/10.1101/2023.02.16.528807`.

Bioinformatic Analysis of the Wound Peptidome Reveals Potential Biomarkers and Antimicrobial Peptides — *Frontiers in Immunology*

Hartman E., Wallblom K., Kjellström S., Schmidtchen A. — *2021*

- DOI: `https://doi.org/10.3389/fimmu.2020.620707`

Peptimetric: Quantifying and Visualizing Differences in Peptidomic Data — *Frontiers in Bioinformatics*

Hartman E., Mahdavi S., Kjellström S., Schmidtchen A. — *2021*

- DOI: `https://doi.org/10.3389/fbinf.2021.722466`

Protein aggregation in wound fluid confines bacterial lipopolysaccharide and reduces inflammation — *bioRXiv (currently in review)*

Petrlova J., **Hartman E.,** Petruk G., Chun Hwee Lim J., Shankar Adav S., Kjellström S., Puthia M., Schmidtchen A. — *2023*

- DOI: `https://doi.org/10.1101/2023.01.27.525825`

The role of full-length apoE in clearance of Gram-negative bacteria and their endotoxins — *Journal of Lipid Research*

Petruk G., Elv´en M., **Hartman E.,** Davoudi M., Schmidtchen A., Puthia M., Petrlova J. — *2021*

- DOI: `https://doi.org/10.1016/j.jlr.2021.100086`

Relevant Work Experience

Medical faculty, Lund University *Lund, Sweden*

Researcher *2020 - Present*

- 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.

Qlucore *Lund, Sweden*

Machine learning developer *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.

Dianovator *Malmö, Sweden*

Bioinformatic consultant *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.

LTH & elsewhere *Lund, Sweden*

Tutor *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)*.

Other Interests

Powerlifting I compete in powerlifting at an international level and am the head of the local powerlifting organization, consisting of >160 members. Beyond training for hours most days, this entails various administrative tasks making sure the organization runs smoothly as well as arranging training camps and competitions.

Philosophy I created an organization with the aim to investigate the ethical dilemmas related to research in the fields of gene-editing and synthetic biology. The organization was very active 2019-2021, and had >30 members from around the globe. Our Facebook-page is still up: `https://www.facebook.com/synthethicsinitiative`

Young Scientists The Organization for Young Scientists is a national Swedish organization hosting science competitions and seminars, as well as acting as an umbrella-organization for student organizations and clubs. Beyond competing, I was engaged in the organization by arranging competitions, being a board-member, and most recently as a judge at the national science competition.

References available upon request.