

Curriculum Vitae

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Education:

2024-2028: PhD in Energy and Environmental Engineering at Mälardalen University (MDU), Västerås, Sweden.

- Project focusing on biomass conversion and value creation from waste including:
 - Improving system assessment methodology and deployment through software development
 - Investigating the impacts of hydrothermal carbonisation on emerging contaminants
 - Intercomparison of organic waste valorisation technologies
 - Mapping and profiling biomass and organic waste to optimize treatment system design

2021-2023: MSc in Sustainable Technology at Kungliga Tekniska Högskolan (KTH), Stockholm, Sweden

- Thesis work in **integrated systems analysis** of sewage sludge treatment technologies advancing the transition towards water resource recovery facilities including **material and energy flow analysis**, comparative attributional **life cycle assessment** and **techno-economic assessment**. Worked alongside private companies C-Green AB and Easy Mining AB analyzing emerging green technologies.
- Experience with wastewater and sewage sludge treatment and analysis at lab scale, performing compositional analysis, flocculation and membrane treatment on wastewaters in 'Water Treatment Processes and Technology' and hydrothermal carbonisation, compositional analysis, vacuum filtration and gas chromatography on organic waste products during the course of experimental phase of thesis work
- Awarded the International Student Scholarship through the KTH Opportunities Fund for academic excellence in the first year of graduate studies
- Orally **presented thesis work at the 11th International Conference on Industrial Ecology** in a dedicated session after receiving a travel grant from the ISIE student section, actively promoting HTC for valorisation of organic waste streams.

2016-2020: BSc in Earth and Environmental Science at The University of St Andrews, St Andrews, Scotland

- Achieved a Second Class Division 1 degree qualification, with a focus on **global biogeochemical cycles**
- Completed a dissertation combining novel and historical data sets to construct a 250 year dendro-climatological temperature reconstruction for Northeastern North America

2011-2015: Phillips Exeter Academy, Exeter, New Hampshire, USA

- Awarded the Perrin Fellowship at graduation to pursue independent travel and personal projects

Relevant Work Experience:

2023-2024: Research Assistant in Agricultural Engineering with The Department of Energy and Technology at The Swedish University of Agriculture (SLU)

- Worked primarily within the Biochar Systems group performing **environmental systems analysis** on various biochar production and application systems in Swedish and international projects
- Provided research support, producing literature reviews, system diagrams, and substance flow analysis for environmental systems analysis within biochar research projects.

- Developed methods for prospective analysis of biochar systems in Sweden and Kenya, including incorporating sanitation and circular bioeconomy perspectives for a novel greywater treatment system targeting rural communities in developing economies and combining life cycle analysis and circular economy in biochar based remediation of contaminated urban soils.
- Pioneered improvements to accounting for **substitution of mineral fertilizers** within LCA of sewage sludge biochar applications in agriculture and gained knowledge in **agronomic effects of thermal treatments** on organic waste streams.

2022-today: Sustainability Framework Advisor, Archr in Stockholm, Sweden

- Co-founder of Stockholm School of Economics (SSE) Business Lab accelerated start-up
- Lead on development of novel sustainability metrics for product comparisons
- Work in tandem with management to align quality sustainability data analysis with consumer expectations and demands (t.ex legibility vs analytic depth)
- Engage with rapidly changing EU law surrounding environmental reporting and sustainability claims and translate them into actionable company policy

2022 (Autumn): Amanuensis (Research Assistant) with The Department of Sustainable Development, Environmental Science and Engineering (SEED) at KTH Royal Institute of Technology

- Established **Elemental Flow Analysis (EFA)** inventories for the REFLOW project
- Developed a life cycle emissions (LCE) analysis for the european residential construction sector
- Worked with multi-regional input-output tables (MRIO) and physical input-output tables (PIOT)

2017-2020: Co-chair of the steering committee at The Tree, a local sustainable food access organization on the Open Food Network in St Andrews, Scotland

- Responsible for all server side platform operational maintenance
- Assisted in order preparation and distribution
- Coordinated steering group on **development and expansion of operations**

Computational and Data Analysis Skills (*with associated courses*):

- GIS: *Geological Mapping and GIS, Spatial Analysis for Earth Scientists, Water in the Environment, Waste Management*
- SPSS: *Analytical and Statistical Methods in Earth Sciences* and Dissertation, well versed in descriptive statistics and analytical methods.
- Microsoft Office Suite: Throughout my education with advanced statistical data analysis in courses listed above alongside *Global Climate Change, Environmental Excursion, and Special Topics in Climate Science*
- STAN: **Material Flow Analysis (MFA)** software learned in *Introduction to Industrial Ecology, Cleaner Production and Industrial Environmental Technology, and Material Flow Analysis for Cleaner Production*. Further developed skills producing **substance and energy flow analysis** for academic publications and industry communication and technology development.
- SimaPro: **Life Cycle Analysis (LCA)** methodology and software skills from *Life Cycle Analysis*
- MRIO: Working understanding of Multi-Regional Input-Output (MRIO) tables
- Sankey Flow Show: Skilled in producing high quality descriptive visuals of complex systems, including legible Sankey flow diagrams.

Other:

- Member of the Swedish Life Cycle Center and the International Society of Industrial Ecology
- Fluent in word processing and communications in English
- Intermediate Swedish language skill with capabilities in navigating written reports and academic material
- Great personal interest in gardening and permaculture, as well as rural revitalisation
- A great love for the outdoors, hiking, hunting and foraging
- A passion for sustainable food, cooking, baking, and fermenting

References:

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