

Jacob Holmberg-Kasa

DOCTORAL STUDENT AT THE SOLID MECHANICS DIVISION, LUND UNIVERSITY

Lund, Sweden

✉ jacob.kasa@protonmail.com



Skills

Languages	Swedish, English
Programming languages	strong = [Matlab, Python]; basic = [C, Fortran, Julia, Haskell, java, Javascript];
Material Knowledge	Characteristics, Mechanics, Phase Transformations, Testing and analysis, Synchrotron- and Neutron Based Experimental Methods, Thermodynamics and Molecular Simulation, Phase-field Crystal modeling
General Knowledge	Solid Mechanics, Mechatronics, Programming, Unix-like operating systems, Applied mathematics, Computer-aided design, Practical metal construction and welding
Welding Designations	[287-1 142 T BW 8 t1,5 D30,0 PC ss nb, sl], [ISO 9606-1 141 P FW FM5 S t5,0/5,0 PB sl], [ISO 9606-1 111 P FW FM5 RA t5,0/5,0 PB sl], [287-1141 T BW 8 S t3,0 D114,0 PC ss nb, ml]

Education

Lund University

DOCTORAL STUDENT AT THE SOLID MECHANICS DIVISION

Lund, Sweden

January 2022 - Present

- Developing models for strain-age cracking in nickel-based alloys by phase-field crystal method.

Malmö University

MASTER OF SCIENCE WITH A MAJOR IN COMPUTATIONAL MATERIALS SCIENCE

Malmö, Sweden

September 2019 - January 2022

- Course Work Completed: Materials Engineering, Scientific Programming, Differential Calculus in Several Dimensions, Phase Transformations, Numerical Methods, Synchrotron- and Neutron Based Experimental Methods and Applications, Continuum Mechanics, Constitutive Modelling, Atomistic modelling, Modeling and Simulation.

Malmö University

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Malmö, Sweden

September 2016 - June 2019

- Course Work: Material and Mechanical Engineering basics, Object-Oriented Programming, Several Variable Calculus with Applications, Finite Element Method.

Projects

Modeling precipitation in hardened binary alloys

MASTER THESIS, MALMÖ UNIVERSITY

Lund, Sweden

May 2021 - November 2021

- Modeling precipitation in hardened binary alloys.
- Simulating precipitation in triangular/square binary system.
- Early development of a numerical strain evaluating method based on Synchrotron Strain Scanning.
- Thesis [English]: <http://urn.kb.se/resolve?urn=urn:nbn:se:mau:diva-47187>

Direct quenching after shake-out

BACHELOR THESIS, MALMÖ UNIVERSITY/SANDVIK

Svedala, Sweden

January 2019 - June 2019

- Development of test procedure evaluating material properties of austenitic manganese steel.
- Testing and analysis of austenitic manganese steel.
- Literature summation and explanation of the mechanics and material properties of austenitic manganese steel.
- Thesis [Swedish]: <http://urn.kb.se/resolve?urn=urn:nbn:se:mau:diva-20416>

Employment

Lund University

DOCTORAL STUDENT, SOLID MECHANICS DIVISION

Lund, Sweden

January 2022 - Present

- Developing models for strain-age cracking in nickel-based alloys by phase-field crystal method.

Alfa laval

Lund, Sweden

WELDING AND ASSEMBLING

July 2010 - January 2022

- Work as part of a team with 12+ members.
- Assembling, testing and inspection of hygienic plate heat exchangers.
- Aid in daily trouble shooting of the process chain.
- Welding of a variation components giving a well rounded knowledge in TIG and MMA welding.
- Continues work with 5S, Standard Operating Procedures(SOP) and Welding Procedure Specification(WPS) standards within the company.

European Space Agency

Noordwijk, Netherlands

INTERN, MATERIALS AND PROCESSES SECTION

September 2020 - February 2021

- Remote internship for a six month duration.
- General literature study for relevant beamlines at large scale neutron and synchrotron facilities for the Material and Processes section.
- Development of a platform in python and javascript evaluating relevant beamlines based on underlying publications based on a linked json database that was implemented.
- Planing and attending meetings for an initial contact with staff at some relevant beamlines.

Malmö university

Malmö, Sweden

TUTOR, COMPUTER-AIDED DESIGN

September 2019 - January 2020

- Managing exercises with 10+ students.
- Evaluating students assignments according to predetermined criteria.
- Assisting in the development of the course program and creating guides on software relevant for the course.