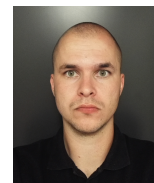


# CURRICULUM VITAE

Jesper Byggmästar



Last updated: March 17, 2022

## CONTACT INFORMATION

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FULL NAME: Jesper Johan Andre Byggmästar  
DATE OF BIRTH: 12 April 1991  
WORK ADDRESS: P.O. Box 43, 00014 University of Helsinki, Finland  
CURRENT POSITION: Postdoctoral Researcher  
E-MAIL: [jesper.byggmatar@helsinki.fi](mailto:jesper.byggmatar@helsinki.fi)  
PERSONAL HOMEPAGE: <https://jezper.gitlab.io>  
ORCID: <https://orcid.org/0000-0002-4898-6150>  
GOOGLE SCHOLAR: <https://scholar.google.com/citations?user=w9R6hcIAAAAJ>

## EDUCATION

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06/2020 PhD, University of Helsinki, Department of Physics  
Thesis: *Analytical and machine-learning interatomic potentials for radiation damage in fusion reactor materials* (graded *Pass with distinction*)  
<http://urn.fi/URN:ISBN:978-951-51-6035-5>  
09/2016 MSc, University of Helsinki, Department of Physics  
Thesis: *Development of interatomic potentials in the Tersoff-Albe formalism for metal compounds* (grade 5/5)  
<http://urn.fi/URN:NBN:fi-fe2017112252123>  
08/2015 BSc, University of Helsinki, Department of Physics  
Major: Physics (grade 5/5)  
Minors: Theoretical physics (grade 5/5), Mathematics (grade 4/5)

## ACADEMIC WORK EXPERIENCE

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08/2021– Postdoc, FCAI: Finnish Center for Artificial Intelligence & Department of Physics, University of Helsinki  
06/2020–08/2021 Postdoc, Department of Physics, University of Helsinki  
09/2016–06/2020 PhD student, Department of Physics, University of Helsinki  
2015–2016 Research assistant/MSc student, Department of Physics, University of Helsinki  
2014–2015 Summer student/BSc student, Department of Physics, University of Helsinki

## SUPERVISORY EXPERIENCE

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1 BSc thesis (2021)  
1 MSc thesis (2021)

## TEACHING EXPERIENCE

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### COURSE LECTURER/ORGANISER:

AUTUMN 2021 Thermodynamiska potentialer (Thermodynamic potentials)  
AUTUMN 2021 Academic writing (undergraduate level)

### COURSE ASSISTANT:

2017 & 2019	Fasta tillståndets fysik (Solid state physics)
2018	Materialfysik (Materials physics)
2017	Kvantmekanikens tillämpningar II (Applications of quantum mechanics II)
2016	Materialfysik I+II (Materials physics I+II)
2015	Strålningsfält och fotoner (Radiation fields and photons)
2014–16	Materiens struktur (The structure of matter)

## LANGUAGE SKILLS

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SWEDISH	Mother tongue
ENGLISH	Fluent
FINNISH	Conversational

## COMPUTER SKILLS

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### General:

UNIX  
 Python (NumPy, SciPy, Matplotlib, etc.)  
 Fortran  
 $\text{\LaTeX}$   
 Git  
 C++ (basics)  
 SLURM & high-performance computing

### Physics:

Molecular dynamics (LAMMPS, PARCAS)  
 Density functional theory (VASP)  
 ASE: the atomic simulation environment

## GRANTS

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- 2017-2022: In total 5 travel grants ( $\sim 11\,000$  €) from MATRENA doctoral school, Svenska kulturfonden, and Waldemar von Frenckells stiftelse.
- 2016: 1500 € MSc thesis grant from Svensk-österbottniska samfundet.

## MISCELLANEOUS

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- Peer reviewer for: *Physical Review B*, *Acta Materialia*, *Journal of Nuclear Materials*, *Computational Materials Science*, *Nuclear Fusion*, *Modelling and Simulation in Materials Science and Engineering*.
- Auditor/operations inspector of Fysikersamfundet i Finland 2019–.

## LIST OF PUBLICATIONS

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<https://orcid.org/0000-0002-4898-6150>  
<https://scholar.google.com/citations?user=w9R6hcIAAAAJ>  
<https://jezper.gitlab.io/pages/publications.html>

## INTERNATIONAL CONFERENCE PRESENTATIONS

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1. *Cascade overlap effects in iron and tungsten*, ICFRM, La Jolla, USA, 2019-10-31 (oral)
2. *Machine-learning interatomic potentials for radiation damage in bcc metals*, ICFRM, La Jolla, USA, 2019-10-30 (poster)
3. *Defect production in cascade overlap with defect clusters in iron and tungsten*, MMM, Osaka, Japan, 2018-10-31 (oral)

4. *Comparing cascade damage accumulation in iron for different interatomic potentials*, COSIRES, Shanghai, China, 2018-06-19 (oral)
5. *Cascade debris overlap mechanism of  $\langle 100 \rangle$  dislocation loop formation in Fe and FeCr*, ICFRM, Aomori, Japan, 2017-11-08 (poster)
6. *Thermal activation of edge dislocation unpinning from voids in iron*, ICFRM, Aomori, Japan, 2017-11-08 (poster)

#### **OTHER SELECTED PRESENTATIONS (WORKSHOPS, SEMINARS, ETC.)**

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1. *Effects of cascade overlap with pre-existing defects in iron and tungsten*, 3rd joint Nordic fusion energy seminar, Copenhagen, Denmark, 2019-06-12 (oral)
2. *Gaussian Approximation Potentials for radiation damage in bcc metals*, ML4MS, Espoo, Finland, 2019-05-08 (poster)
3. *Effects of cascades overlapping with defect clusters in fusion-relevant materials*, Physics days, Helsinki, Finland, 2019-03-05 (poster)
4. *Simulations of thermally activated dislocation unpinning from obstacles in iron*, 2nd joint Nordic fusion energy seminar, Espoo, Finland, 2017-06-16 (oral)
5. *Thermal activation of edge dislocation unpinning from obstacles in iron*, Physics days, Helsinki, Finland, 2017-03-23 (poster)