Daniel Holmberg

Data Science Student

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Experience

Al Engineer

CERN

♀ Geneva, Switzerland

- Shared contract between experimental physics and IT departments
- Work on Kubeflow, a centralized ML service for training, versioning and serving of models
- Incorporate CMS ML use cases and workflows, with jet energy regression as a prime example

Research Assistant

Helsinki Institute of Physics

Mov 2020 - Jan 2021

• I research how jet energy corrections can be performed using deep neural network regression under the guidance of Dr. Henning Kirschenmann and Associate Prof. Mikko Voutilainen.

Software Developer

Fjuul Vision Oy

March 2020 - March 2021

P Helsinki, Finland

- Worked on the full software stack of the Fjuul health app
- Used a range of Google Cloud services such as BigQuery, PostgreSQL and Cloud Functions
- My biggest task was integrating the Withings (former Nokia health)
 tracker into the Fjuul platform, which involved implementing the oauth
 handshake, API subscriptions, data retrieval, setting up data tables
 using Terraform (infrastructure as code), as well as updating the app
 frontend.

Research Assistant

University of Helsinki

🛗 May – June 2018, May – August 201**9** Helsinki, Finland

• I assisted Dr. Antti Kuronen and Dr. Pekko Kuopanportti on the project Atomistic modeling of kinetics on surfaces and interfaces of iron-chromium alloys, where I tested the performance of new interatomic potentials for different compositions of the Fe-Cr alloy using molecular dynamics simulations.

simulations.

Teaching Assistant

University of Helsinki

March − May 2018, 2019, 2020

 Helped students with their homework in the bachelor's course on special theory of relativity

Education

M.Sc. Data Science

University of Helsinki

2019 - present

- Thesis title: Jet Energy Corrections with Graph Neural Network Regression
- GPA: 4.3/5

B.Sc. Physics

University of Helsinki

2016 - 2019

- Thesis title: Interatomic Potentials for Simulating Fe-Cr
- GPA: 4.3/5

Studentexamen

Ekenäs Gymnasium

2013 - 2016

• Laudatur: Chemistry, English, History

• Eximia cum laude approbatur: Math

Organizations

Managing Editor

Spektrum rf

₩ 2021

- Lead our student paper's team of editors
- Wordpress admin for the website spektrum.fi/spektraklet
- Keep members up to date on social media

Vice-Chairman

Nyland Brigade Conscript Committee

2018

- Hosted meetings for conscript representatives and officers to discuss current affairs at the brigade
- Arranged working life events and a study fair with some 20 universities and polytechnics
- Visited other finnish brigades together with our chairman to keep joint Conscript Committee meetings

Experience

Tutor

Uplus Yksityisopetus Oy

♦ Helsinki, Finland

• Private teacher in mathematics, physics and chemistry

Summer Staff

Premarin Oy

₩ June - July 2012 - 2017

♀ Ekenäs, Finland

- Facility management and caring for boats
- · Contract worker at the explosives company Forcit Oy

Articles

P. Kuopanportti, M. Ropo, D. Holmberg, H. Levämäki, K. Kokko, S. Granroth, A. Kuronen. Interatomic Fe-Cr potential for modeling kinetics on Fe surfaces, 2021. Accepted into the Computational Materials Science journal. doi: 10.1016/j.commatsci.2021.110840

Projects

Atmospheric Aerosol Modeling INAR

- Predicted aerosol concentrations using ML based on satellite data from Copernicus Atmosphere Monitoring Service
- Collaboration between a group of data science students and University of Helsinki Institute for Atmospheric and Earth System Research

Sithub.com/deinal/aerosol-modeling

Helper

CodeRefinery

- Advancing research software development FAIRness (findability, accessibility, interoperability, and reusability) through CodeRefinery, a project within the Nordic e-Infrastructure Collaboration
- Participant of the June 2020 CodeRefinery instructor training in collaboration with Delft University of Technology
- Helper at the first online mega-CodeRefinery workshop

% coderefinery.github.io/2020-05-25-online/#helpers

Spektrum App

Spektrum rf

 Made an app that fetches the university lunch menu, the student paper and the activities calendar among other things

• play.google.com/store/apps/details?id=fi.spektrum.app

Discord Bot

Spektrum rf

 Bot running in the cloud adding some fun features to the student association's Discord server

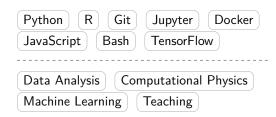
Spektrumrf.github.io/bot

Languages

Finnish: Intermediate, B1

German: Elementary, A1

Skills



Talks

- Jet Energy Corrections with DNN Regression, CMS ML Forum 8.9.2021
- Atmospheric Aerosol Modeling, HU Data Science Project 12.5.2020
- Emerging Computing Architectures, HU Distributed ML Seminar 22.3.2020
- Interatomic Potentials for Fe-Cr, Helsinki Accelerator Laboratory Simumeet 26.8.2019

Stipends

- Huawei Scholarship "given to the best Master's theses in data security and software engineering", 2021
- Study grant from the J. Pippingsköld and F. J. Wiik fund, 2020
- Study grant from the W. Brenner and R. Donner fund, 2019
- Scholarship from the Swedish cultural foundation, 2019
- Scholarship from Sophie von Julin's foundation, 2019
- University of Helsinki study grant "to undergraduate students of mathematics and natural sciences whose academic performance has been excellent", 2018

Hobbies

- Football with CERN FC 2021
- Futsal with Spektrum FC 2019-2021
- Anchor in the Jukola Orienteering Relay 2019
- Helsinki Half Marathon 2019
- Baltic Sea Half Marathon 2019