

# SIGFRID STJÄRNHOLM

Physics student

**M** Uppsala, Sweden



github.com/kladdy



## **CAREER SUMMARY**

As a student at both gymnasial and University level, I have been engaged in various concils related to my studies. Working as a software consultant alongside my studies have yielded me great experience in how projects develop and has also allowed me to test the waters in a large variety of programming paradigms.

#### **EDUCATION**

**Uppsala University** 

**Uppsala University** 

**particle physics** 

**Quantum physics** Nuclear physics

**Simulations** 

**INTERESTS** 

Experiments

Open-source

#### **SKILLS & TOOLS**

# **Software** Python C# / C++ Node.js SQL HTML/CSS LaTeX Git **Hardware** Arduino Computer assembling

Circuits

## **HOBBIES**

- Mountain hiking
- Bread baking Skiing
- റ് Cycling
- Computer hardware

## **ENGAGEMENTS**

Banner carrier for Norrland's nation (Student association in Uppsala)

**1** Test supervisor at the Swedish Scholastic Aptitude Test (Högskoleprovet, SweSAT)

Hometown ambassador for Uppsala University

Master's degree (Master's Programme in Physics)

2021 - Present

A two-year programme at Uppsala University, specializing in the Nuclear and Particle Physics track. The programme reinforces the knowledge within fundamental physics, and with the course collection of mine I have chosen to put a lot of weight on the experimental aspect of particle physics.

### **Achievements:**

- Student representative in the Programme Advisory Board for the Masters's Programme in Physics
- Recipient of the award 'Best student presentation' at The Student Conference in Science and Technology 2021
- Recipient of the scholarship Hallberg, Malin and Ivar, which is awarded to a 'talented student'

**Selection of courses (so far):** 

**Statistical Methods in Physics** Classical Electrodynamics Computer Programming II Symmetry and Group Theory in Physics

**Bachelor's degree** (Bachelor's Programme in Physics) 2018 - 2021

involves plenty of rigour in mathematics and a lot of programming. **Achievements:** 

A three-year programme at Uppsala University covering a large portion the fundamental

physics - from classical mechanics to advanced quantum physics. The programme also

- Student representative in the Programme Advisory Board for the Bachelor's Programme in Physics
- Vice Chairman in the Student Faculty Council for Physics students
- Recipient of three prices from the Mathematical Society at Uppsala University for distinctive performance in the courses Geometry and Calculus I, Geometry and Calculus III, and Fourier Analysis
- Recipient of Melanderhjelm's scholarship from the Faculty of Science and Technology at Uppsala University

### **Selection of courses:**

**Analytical Mechanics** Complex Analysis Electromagnetic Field Theory **Computer Programming I** Geometry and Calculus I, II & III Elementary Particle Physics Fourier Analysis Electromagnetism Mathematical Statistics KF Linear Algebra II Mathematical Methods of Physics Mechanics KF & III Nuclear Physics Ordinary Differential Equations I Physics Project I & II **Medical Physics** Physics Project with a Research Basis Physics and Finance Quantum Mechanics **Quantum Physics** Scientific Computing KF & II Special Relativity **Statistical Mechanics Thermodynamics Waves and Optics** 

**Gymnasium** (Natural Science Programme) 2015 - 2018

Björknäsgymnasiet

A three-year programme at Björknäsgymnasiet involving the natural sciences.

- Chairman in the Programme Advisory Board for the Natural Science Programme
- Chairman in the Student Council for Björknäsgymnasiet • Scholarship from the Natural Science Programme for distinctive performance

competitor in the Nordic-Baltic Physics Olympiad (NBPhO)

• Attendee of a 2-week long internship at CERN (HSSIP)

Finalist in Wallenbergs fysikpris (Swedish national physics competition) and

- Attendee of Berzeliusdagarna, a weekend-seminar for students interested in chemistry
- Attendee of Rymdforskarskolan, a 2-week programme at Esrange space center

# **WORK EXPERIENCE**

### Research assistant 2021 - Present

**Uppsala University** 

With a part-time employment during the Master's Programme, I work as a research assistant at the Department of Physics and Astronomy at Uppsala University. I am involved within the Astroparticle Physics research group, coupled to the Division for High Energy Physics (HEP).

**Involvements:** 

 Research tasks related to using neural networks to reconstruct neutrino properties from radio detector data. The work is to be used for an upcoming detector station at the South Pole called IceCube-Gen2 radio, and is a continuation of my bachelor's thesis.

### **Software consulting** 2016 - Present

Jolix AB

Jolix is an IT consulting company specializing in E-commerce applications. At Jolix, I have worked on plenty of projects within varying programming environments. The company also runs a small electronics store in Boden named pålyset.se, in which I have worked as a clerk.

### **Projects:** • Backend development of a checkout system for organizations using C#, Node.js &

- microservices Backend development of a message listener for IoT-devices reporting back to a
- central hub using Node.js • Integrating customers to a Storm API in C#
- Frontend development of a dashboard web application for E-commerce admins

Node.js

**Technologies used:** 

HTML

CSS

Javascript/Typescript

#### .NET (4.5 & Core) Python

Test-driven development Unit testing Microservices React Redux Swagger

# 2019 - 2021

**Event organizer** 

Lise Meitner-dagarna is a yearly weekend-seminar in Stockholm for high-school students

Lise Meitner-dagarna

**JSON** 

interested in physics. During three intensive days, the students get to partake in laboratory experiments, exhibitions and lectures by prominent physicists in a variety of fields. The organizing group consists of 4 members, and about 130 students from all over Sweden attend the event each year.

# Roles:

- Head of administration (2019 2020): Bookings for hotel, catering, and trips for the whole event. Managing registrations for schools, students, and exhibitors.
  - Head of communication and marketing (2021): Designs for mailings. Communication with schools and students. Upkeep of the website. Photography and social media.