

ELMAR RITSCH

COMPUTATIONAL PHYSICIST & SENIOR SOFTWARE DEVELOPER

Geneva Area – Switzerland/France

elmar@ritsch.io - ritsch.io - [LinkedIn.com/in/elmar-ritsch](https://www.linkedin.com/in/elmar-ritsch)



+ SUMMARY

I'm a passionate computational physicist with a strong background in developing high performance C++ applications for Monte Carlo simulations of CERN's big data experiments. I like spending my free time developing well-tested algorithmic trading applications in Python and combining them with machine learning techniques. I love the idea of open-source software and I have contributed to a number of public projects. You might also find me doing penetration tests of public websites, flying single engine airplanes with my friends or spending time outdoors in the Alps.

+ CORE COMPETENCIES

Personality and principles

Communication is key, regardless of team size
Love learning, building and creating new things
Team player who loves to collaborate and also to work independently
Code absolutely needs tests
Code must be clear and readable
Beware of premature optimization and feature creep

Workflows and practices

Test-driven Development
Code Reviews
DevOps
Continuous Integration, Delivery and Deployment

Programming languages

Python, C++, Bash, C

Tools

Docker, Git, GitLab, Jira, Subversion, Elasticsearch

Science

Monte Carlo Simulation, Statistics, Physics

Operating systems

Linux, macOS, Windows, Android

+ EXPERIENCES

2015-2018 **SENIOR SOFTWARE DEVELOPER, POSTDOCTORAL RESEARCHER**

CERN, Geneva, Switzerland

Co-leader of a software developer team for high performance Monte Carlo simulations. CPU and memory performance analysis and optimization. Focus on software quality through testing and test-driven development. Official guide for CERN visitors.

2011-2015 **SOFTWARE DEVELOPER, PHD RESEARCHER**

CERN, Geneva, Switzerland

Design, develop and maintain a high performance Monte Carlo simulation framework written in C++.

2009-2011 **SOFTWARE DEVELOPER**

UNIVERSITY INNSBRUCK, Innsbruck, Austria

Develop and maintain a high speed Monte Carlo simulation application.

2007 **PLANT ENGINEER**

AGB Anlagen-Geräte-Betriebstechnik GmbH, Hall in Tirol, Austria

Design of artificial snow systems.

2006 **MECHANICAL ENGINEER**

SEZ AG, Villach, Austria

Design of chemical cleaning machines for semiconductor wafers.

+ EDUCATION

2011-2015 **PHD IN COMPUTATIONAL PHYSICS - DISTINCTION**

CERN, Geneva, Switzerland

UNIVERSITY INNSBRUCK, Innsbruck, Austria

PhD thesis: "ATLAS Detector Simulation in the Integrated Simulation Framework applied to the W Boson Mass Measurement"

2006-2011 **MAGISTER/MASTER IN COMPUTATIONAL PHYSICS - DISTINCTION**

UNIVERSITY INNSBRUCK, Innsbruck, Austria

Chairman of student's association.

Diploma thesis "Fast Calorimeter Punch-Through Simulation for the ATLAS Experiment"

1999-2004 **MECHANICAL ENGINEER**

TECHNICAL HIGH SCHOOL ("HTL"), Innsbruck, Austria

Setup and program a control system for an industry robot as the final diploma project.

+ LANGUAGES

Mother tongue **German**

Foreign languages **English**

(first foreign language, level C1)

French

(second foreign language, level B1)

+ PERSONAL DETAILS

Nationality Austrian

Year of birth 1984

+ OTHER SKILLS AND HOBBIES

Private Pilot flying single engine airplanes
Ethical Hacking – CERN White Hat
Voluntary Paramedic (in 2006)