

# Darko Perović



Geneva, Switzerland

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## Key strengths:

Fellow in Fire Safety Engineering at CERN, IMFSE Fire Safety Engineering Master graduate

Broad knowledge in civil, structural and fire safety engineering

International experience – Switzerland, Denmark, Australia, Sweden, UK, Belgium, Lebanon

## OBJECTIVE

I want to apply my knowledge to difficult engineering problems that matter at a global scale, take part in dynamic, team-oriented projects, and contribute in making a change towards a better and safer world.

## EXPERIENCE

- Sep 2021 – present **CERN – European Organization for Nuclear Research** Geneva, Switzerland  
HSE-OHS-IB, Fire Safety Engineering Team, Fellow  
Study leader for **FIRIA project** applied to two vital CERN facilities – a general purpose detector – Compact Muon Solenoid (**CMS**) and an accelerator - Proton Synchrotron (**PS**). In charge of **computing** and **fire hazard work packages**. Strong focus on **fire risk assessment**, fire modelling and efficient parallel computing using high performance computing (HPC).  
Actively applying the **Swiss fire protection regulations** of the **AEAI** on multiple CERN buildings (industrial, office and multipurpose).
- May 2019 – Aug 2021 **DBI – Danish Institute of Fire and Security Technology** Copenhagen, Denmark  
Advanced Services department, Research Consultant  
Numerical modelling (CFD and FEM) for tackling various industry and research projects. Experiments on material characterization, smoke and soot analysis. **Risk assessment tasks**. Work with several industries – construction, naval and offshore.
- Dec 2018 – Mar 2019 **University of Queensland**, Research Assistant Brisbane, Australia  
Conducted research in the field of timber structures – experimentally determining and correlating charring and regression rates of cross-laminated timber (CLT).

## EDUCATION

- 2016 - 2018 **International Master of Science in Fire Safety Engineering IMFSE**  
MSc in Fire Safety Engineering. Ghent University, Lund University and University of Edinburgh  
Erasmus+ full scholarship
- 2011 - 2015 **University of Belgrade, Faculty of Civil Engineering**  
BSc in Civil Engineering (Structural Engineering module)  
Graduated in the top 10%

## FIELDS OF EXPERTISE AND INTEREST

Fire risk assessment	Numerical modelling (CFD and FEM)
Project and client management	Applications of AI / ML in civil engineering
Fire dynamics	Sustainable materials and renewable sources of energy

## COMPUTER SKILLS

Software	Fire Dynamics Simulator (FDS), COMSOL Multiphysics, SIMULIA Abaqus FEA, Autodesk AutoCAD
Programming	Python, MATLAB

## LANGUAGES

	Speaking	Writing	Reading	Certificates
Serbian		Native		
English	C2	C2	C2	CAE
French	B2	B2	C1	DELFB2
Hungarian	B1	A2	B2	

## APPENDIX – selected projects, activities, publications, and references

### SELECTED PROJECTS

Project	Design of 8 – 12 MW wind turbines
Client(s)	Siemens Gamesa and Vestas
Details	Involved in the design of the fire-safe wind turbines through risk assessments and modelling of various fire scenarios (electrical cabinets, battery racks, etc.) as a part of an integrated design of wind turbines.
Project	Numerical reconstruction and investigation of carpark fire at Stavanger airport
Client(s)	If insurance
Details	Assisted with expert advice in legal proceedings between the insurance company and the designers by creating a numerical model of a full fire spread between ~300 cars on multiple floors of the Stavanger airport car park. Realistic representation of fire spread times has been achieved – compared to footage, witness testimony and fire investigation evidence.
Project	Design of fire doors
Client(s)	Multiple Danish fire door producers
Details	Created added value by improving the design of various fire doors prior to certification fire resistance tests (ISO 834) through thermo-mechanical modelling solutions.

### ACTIVITIES AND ACKNOWLEDGEMENTS

Summer schools and conferences	<p>Presented the FIRIA project – CMS case study at International Technical Safety Forum - ITSF2022 (Geneva, Switzerland, October 2022).</p> <p>Attended <b>3rd Summer School on Fire Dynamics Modelling 2022</b> (Jülich, Germany, June 2022).</p> <p>Attended the course “<b>Advanced quantitative risk &amp; resilience assessment</b>” given by Prof. Francesco Di Maio and Prof. Enrico Zio from Politecnico di Milano (online, autumn 2021).</p> <p>Attended Joint European Summer School on Fuel Cell, Electrolyser and Battery technologies (JESS) with the focus on <b>hydrogen safety</b> (Athens, Greece, September 2019).</p> <p>Gave a talk on “Experiences with smoke particle size distribution measurements” at <b>Nordic Fire &amp; Safety Days</b> (Copenhagen, Denmark, August 2019).</p> <p>Presented the paper “Identification and characterization of design fires to be used in performance-based fire design of CERN facilities” at <b>Interflam</b> (London, UK, July 2019).</p> <p>Volunteered in organizing the <b>IAFSS 12th International Symposium on Fire Safety Science 2017</b> (Lund, Sweden, June 2017).</p>
Scholarships	<p><b>Awarded with one of five Erasmus+ full scholarships</b> for the IMFSE program (2016 - 2018)</p> <p><b>Tuition fully funded</b> by the University of Belgrade for excellence in studies (2011 - 2015)</p> <p><b>Scholarship for outstanding students</b>, Ministry of Education, Science and Technological Development, Serbia (2011, 2012)</p>
Seminars	<p>EESTEC Soft Skills Academy - trainings in time management, working in a team, leadership, communication and feedback, constructive solving of problems, etc. (2013)</p>
Volunteering	<p>Volunteering at <b>Samedi du Partage</b> – collection of food and hygiene products for people in precarious situations (Geneva, Switzerland, 2021 – present)</p> <p>Volunteered at IAESTE LC, Belgrade – organized activities for international technical students conducting internships in Serbia (Belgrade, Serbia, 2012 - 2015)</p> <p>Volunteered on the project “Loud for Health”, improving the national healthcare system, NGO “Serbia on the Move” (Belgrade, Serbia, 2013)</p>

## ADDITIONAL PROFESSIONAL ACTIVITIES AND EXPERIENCES

- **Supervision** of several **internships, Master, and Bachelor theses** at CERN and at DBI.
- Close collaboration with **CERN Fire and Rescue service** in delivering fire safety strategies tailored to the needs and capabilities of the internal fire brigade, taking into consideration the unique layout of CERN facilities and corresponding fire intervention plans.
- Organising **FiReLabNet** (Fire safety for Research Laboratories Network) biannual meetings – online conference where fire safety professionals from research laboratories across the world present and discuss about learnings from the past, current issues and plans for future projects.

## PUBLICATIONS

Master thesis / journal publication	<p><b>“Identification and characterization of design fires and particle emissions to be used in performance-based fire design of nuclear facilities”</b></p> <p>Analytical and experimental work with design fires and smoke characterization for common combustibles present at CERN – electrical cabinets, insulating oils and cables. Paper presented at <b>Interflam 2019</b> and published in Fire and Materials journal (<a href="#">doi-fam-2881</a>).</p> <p><b>“Combustibility study of resin for warm magnet coils used at CERN” – supervisor</b></p> <p>Experimental chemical and fire characterization of different epoxy resin types used in warm magnet coils at CERN (<a href="#">VBRM05 20231</a>).</p>
Conference proceedings	<p><b>“Fire modelling and structural assessment of concrete linings of underground structures”</b></p> <p>CFD and FEM analysis of behaviour of concrete linings exposed to fire in ATLAS cavern of LHC. Published in proceedings of conference <b>Eurostruct 2023</b> (<a href="#">doi-cepa-2206</a>).</p>

## OTHER

Sports	<b>Long distance running</b> – marathons and ultra-marathons, scuba diving - PADI rescue diver, skiing, cycling, sailing
Hobbies	Reading, playing guitar, cooking

## REFERENCES\*

Name	Occupation	Contact details
Dr Saverio La Mendola	Leader of Occupational Health and Safety Group, CERN Project Manager of FIRIA project, CERN	<a href="mailto:saverio.la.mendola@cern.ch">saverio.la.mendola@cern.ch</a>
Dr Oriol Rios	Deputy Section Leader of Infrastructure & Building Safety Engineering Section, CERN Deputy Project Manager of FIRIA project, CERN Leader of Fire Safety Engineering team, CERN Direct supervisor of Darko Perović during the fellowship at CERN	<a href="mailto:oriol.rios@cern.ch">oriol.rios@cern.ch</a>
Prof Bjarne Husted	Senior Researcher at the Danish Institute of Fire and Security technology – DBI Associate Professor at the Danish Technical University – DTU	<a href="mailto:bph@dbigroup.dk">bph@dbigroup.dk</a>
Prof Grunde Jomaas	Head of Department for FRISSBE (fire-safe sustainable built environment), ZAG, Ljubljana, Slovenia	<a href="mailto:grunde.jomaas@zag.si">grunde.jomaas@zag.si</a>
Prof Bart Merci	Senior Full Professor at Ghent University. Program Director of International Master of Science in Fire Safety Engineering	<a href="mailto:bart.merci@ugent.be">bart.merci@ugent.be</a>

\* Reference letters can be provided upon request.