

Leonhard KELLERER

MSc Aerospace



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 Buschingstraße 63, 81677, München
 Born 17th March 1998 (27 years) in Munich

I have experience in implementing [matrix-free CutFEM] finite-element methods in deal.II.

I am especially interested by bringing my skills together in the development of advanced high-order schemes for fluid dynamics.
(intersection of my skills) - solving advanced physics problems

Développeur et concepteur JEE depuis plusieurs années, j'ai également une expérience de développement sur l'ensemble de l'écosystème Java (Android, J2ME sur PDA et Javacard sur chipset NFC). J'occupe aujourd'hui un poste d'architecte logiciel et reste passionné par mon métier et par les nouvelles technologies en général. Particulièrement intéressé par les nouveaux usages et les opportunités que peut amener le développement de la 4G sur le territoire, je souhaite poursuivre ma carrière sur des projets de développement mobile innovants en qualité d'architecte logiciel et/ou développeur/concepteur.

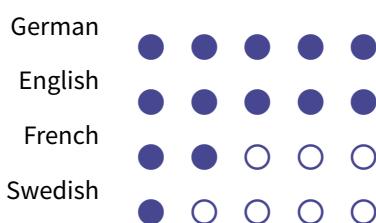
SKILLS

Programming	Python (NumPy, JAX, Matplotlib, SciPy, Cantera), C++, MATLAB
Frameworks	Spring, Spring Boot, Ionic 3, Angular 2, Angular 4, ZK, JBoss RichFaces
Bases de données	IBM DB2, Oracle Database, Microsoft SQL Server, MySQL, PostgreSQL
Outils de développement	IntelliJ Idea, Eclipse, Visual Studio Code, Maven, Ant, SVN, git
Middleware	JBoss EAP, Apache Tomcat, Websphere Application Server (WAS)
Systèmes d'exploitation	Mac OS X, Windows Server, Windows 7, Linux Redhat, Linux Centos
Autres	architecture SOA, technologies RFID, NFC et code barre 1D/2D

EDUCATION

2025	Master of Science in Aerospace at Technical University of Munich
	➤ Term paper "Investigation of Reacting Shock-Bubble Interactions in JAX-Fluids, graded 1.0"
	➤ Master's thesis "A High-Order Matrix-Free CutFEM Approach for Parabolic Two-Phase Problems with Moving Interfaces", graded 1.0
	➤ Graduated with the final grade 1.3
Winter semester 2022-2023	Erasmus exchange at the University of Liège, Belgium
2021	Bachelor of Science in Mechanical Engineering at Technical University of Munich
	➤ Subject of the final thesis : "Analysis of Deep Reinforcement Learning Strategies for Implicit LES Modeling", graded 1.0
	➤ Graduated with the final grade 2.0
2016	German Abitur

LANGUAGES



THESES

FEM deal.II C++ git

INVESTIGATION OF REACTING SHOCK-BUBBLE INTERACTIONS IN JAX-FLUIDS

2022

Term Paper

Development of the reactive flow submodule for the differentiable finite volume code JAX-Fluids.

FV Python JAX JAX-Fluids git

ANALYSIS OF DEEP REINFORCEMENT LEARNING STRATEGIES FOR IMPLICIT LES MODELING

2020-2021

Bachelor's Thesis

Implementation of WENO finite-volume methods for the turbulent Burgers and Kuramoto-Sivashinsky equations. Control of stencil weights to achieve an optimal implicit turbulence model.

FV RL Python PyTorch

PROFESSIONAL EXPERIENCE

May 2023	Research Assistant, TUM CHAIR OF AERODYNAMICS AND FLUID MECHANICS
September 2023	Continuation of term paper project : integration of differentiable reaction kinetics into JAX-Fluids. Extension to more advanced reaction mechanisms Python JAX
April 2023	Teaching Assistant, TUM ASSISTANT PROFESSORSHIP OF SUSTAINABLE FUTURE MOBILITY
July 2023	Supported the practice sessions of <i>Thermodynamics I for Aerospace</i>
April 2022	Teaching Assistant, TUM ASSISTANT PROFESSORSHIP OF SUSTAINABLE FUTURE MOBILITY
July 2022	Supported the practice sessions of <i>Thermodynamics I for Aerospace</i>
October 2021	Research Assistant, TUM CHAIR OF AERODYNAMICS AND FLUID MECHANICS
March 2022	Supported the development of JAX-Fluids, including a test suite to verify the correct behavior of the code Python JAX
August 2017	Preliminary Internship, KNORR-BREMSE SYSTEME FÜR SCHIENENFAHRZEUGE GMBH
September 2017	Technical internship in order to gain practical knowledge with respect to machining, forming, joining and disjoining processes. Departments experienced were the machining workshop for prototype manufacture, apprenticeship workshop and service workshop, brake test and service air supply
June 2017	Preliminary Internship, BMW AG
August 2017	Technical internship in the departments for concept car manufacture, bodywork, joining processes, assembly, component testing and additive manufacturing

REFERENCES

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