



JULIAN STOBBE

PHYSICIST, PHD

Specialized in numerical methods and dual studies in computer science with a focus on financial mathematics using machine learning techniques.

My strengths lie in quantitative analyses and scalable numerical implementations.

INFOS

NAME

Julian Stobbe

ADDRESS

Wiesingerweg 42
20253 Hamburg

PHONE

(+49) 176 457 024 48

EMAIL

julianstobbe@proton.me

WEBSITE

julianstobbe.de

GITHUB

[Julian Stobbe](#)

LINKEDIN

[Julian Stobbe](#)

HOBBYS

Bouldering
Weight Lifting
Hiking
Board Games
Playing Cello
Metal Concerts

LANGUAGES

German
(Native speaker)
English
(Business Fluent)
French
(Basics)

EDUCATION

PhD Physics – University Hamburg

November 2019 – May 2025, Grade: 1.0

Quantum field theory for many particle systems

Master Computer Science – Goethe-University Frankfurt

September 2015 – September 2019, Grade: 1.0

Award for „besten Absolventen Master Informatik“
Systemic risks in financial networks

Master Physics – Goethe-University Frankfurt

September 2015 – April 2018, Grade: 1.0

Implementation of continuous time quantum Monte Carlo solvers

Bachelor Physics – Goethe-University Frankfurt

October 2010 – September 2015, Grade: 1.4

Investigation of a Gaussian basis set for density functional theory

Abitur – Friedrich-List Schule Wiesbaden

May 2009

Special academic achievement: Contribution to the anonymization overlay network I2P as a fifth examination subject

WORK EXPERIENCE

Research Associate – University Hamburg

October 2019 – April 2025

*Project proposals (**Grant Acquisition, Project Management**), supervising master's students (**Teaching**), PhD Project (**Self-Organization, Teamwork**)*

Visiting Researcher – Ecole Polytechnique

Februar 2019 – May 2019

*Project proposals (**Grant Acquisition, International Research**)*

Tutor - Freelancing/University

October 2011 – current

*Tutor for Bachelor/Master students in STEM (**Teaching, Communication**)*

Civil Service - Zwerg Nase Haus Wiesbaden

August 2009 – April 2010

*Work at Zwerg Nase, Home for disabled children (**Communication**)*

PUBLIKATIONS

Suppression of the charge fluctuations by nonlocal correlations close to the Mott transition

I. Titvinidze, J. Stobbe, M. Leusch and G. Rohringer; in preparation (expected: summer 2025)

A machine learning approach to the Luttinger-Ward functional

D. Springer, J. Stobbe, H. Ebl, S. Andergassen, D. Di Sante, A. Toschi and G. Rohringer; in preparation (expected: fall 2025)

Recent Progress on the Ladder Dynamical Vertex Approximation

J. Stobbe and G. Rohringer; in preparation (expected: fall 2025)

Mean field decoupling of single impurity Anderson model through auxiliary Majorana fermions

I. Titvinidze, J. Stobbe, G. Rohringer; 2025, Annals of Physics 474, 169904

Consistency of potential energy in the dynamical vertex approximation

J. Stobbe, G. Rohringer; 2022, Physical Review B 106 (20), 205101

Systemic Greeks: Measuring risk in financial networks

N. Bertschinger, J. Stobbe; 2018; arXiv:1810.11849

Abschlussarbeiten: PhD Thesis, CS Master, Physics Master

SOFTWARE PROJECTS (SELECTION)

LadderDGA.jl Julia (**multi-threaded**, **CI**, **Jupyter**)

Developed as part of the PhD thesis. Numerous scripts in Jupyter Notebooks for evaluation and plotting are included.

jED.jl Julia (**CI**, **TDD**, **Educational**)

Clean implementation of a well-known algorithm for educational purposes.

LuttingerWard_from_ML Python (**PyTorch**, **Lightning**)

Machine learning model utilizing data from jED.jl.

IDAGPythonWrapper Python, Bash, Fortran77/90 (**Slurm**, **HPC**)

Interface between multiple codes. Can edit and compile code templates, build and submit dependency queues in Slurm/SGE

CTQMC C++14, Python, Mathematica (**OOP**, **Boost**, **GNU make**, **Monte Carlo**)

Developed as part of the Physics Master's thesis

Sys_Risk C++14, Python, R (**OOP**, **CI**, **MPI**, **gnuplot**, **CMake**, **GTest**, **Monte Carlo**, **Pandas**, **Jupyter**)

Developed as part of the Computer Science Master's thesis.

SKILLS

High Performance Computing



Design Patterns



Financial Mathematics



Quantum Field Theory



Machine Learning



Unix/POSIX



Object Oriented Programming



TDD/CI



Statistics



PROGRAMMING

C++



Python



Fortran



Julia



C



Bash



Java



Haskell



Weitere (SQL, Prolog, JavaScript ...)

