

JACOBUS PHILIP HAUPT

Stuttgart, Germany ◇ p.haupt@fkf.mpg.de ◇ jphaupt.github.io ◇ GitHub ◇ LinkedIn ◇ Google Scholar

ABOUT

I am a scientist at the Max Planck Institute for Solid State Research in Stuttgart, Germany, conducting research in high-accuracy quantum chemistry using first principles and high-performance computing. I strive to use my skills to better model Nature and ultimately have a positive contribution to society.

EDUCATION

PhD in Computational Chemistry (Alavi group) 2020 – April 2025
Max Planck Institute for Solid State Research *Stuttgart, Germany*

- *Development of the Transcorrelated Full Configuration Interaction Quantum Monte Carlo Method*
- Lead developer of the PyTCHInt (transcorrelated integral evaluator, to be released) and NECI (FCIQMC software) libraries: improved code standards, test standards, code reusability and interoperability

BSc in Combined Honours Physics & Mathematics, Minor in Computer Science
With Co-Operative Education 2014 – 2019
The University of British Columbia *Vancouver, Canada*

- GPA: 85.8/100 (4.00), graduation with distinction

CO-OPERATIVE EDUCATION WORK PLACEMENTS

- Machine learning for optical physics UBC, 2019
- Machine learning for polymer sequencing EPFL, 2018
- Machine learning for experiment automation MPI-FKF, 2017
- Business intelligence staffing analysis RCMP, 2016

KEY SKILLS

- **Programming:** Python, Julia, C++, Fortran, R, SQL, LaTeX, bash
- **Software Tools:** MPI, OpenMP, CUDA, PyTorch, Cython, Keras, TensorFlow, CI/CD, git
- **Machine Learning:** neural networks, gaussian processes, regression, dimensionality reduction
- **Languages:** English native speaker, intermediate German (B2), basic Afrikaans and basic French

ADDITIONAL QUALIFICATIONS

- Coauthor of two peer-reviewed articles, with another six in preparation (two submitted)
- Presented posters at numerous international conferences
- Additional coursework at The High Performance Computing Center (HLRS) Stuttgart

REFERENCES

Available upon request.