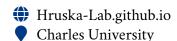
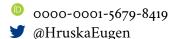
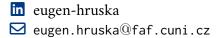
Eugen Hruška, Ph.D.







Employment/Research

Academic Assistant (tenure track), Faculty of Pharmacy, Charles University, Czech Republic

Quantitative prediction of drug metabolism with high-throughput simulation and explainable machine learning.

2020 – 2022 Postdoctoral Fellow, Emory University, USA

High-throughput simulation of explicit solvation at DFT accuracy and explainable machine learning of chemical properties.

2014 – 2020 Graduate Research Assistant, Rice University, USA

Determined optimal adaptive sampling strategies for folding proteins and the upper limit for speed up with adaptive sampling. Developed a scalable and open-source adaptive sampling platform enabling deep learning. Showed adaptive seeding reaches accurate protein folding and protein dynamics.

Bachelor student, University of Regensburg, Germany
Localized interaction interface between proteins central to polycystic kidney disease.

Talks

- Boltzmann distributions from explicit solvation to protein dynamics, UCT&IOCB Theoretical Chemistry seminars
 - Bridging the explicit solvation experiment-calculation divide with machine learning and high-throughput simulation, EuChemS CompChem
 - Larger datasets of ground truth chemistry explanations, @XAI_Research
- Ground truth explainabilities for explainable artificial intelligence, ACS
 - AutoSolvate: Open source high-throughput generation of explicitly solvated systems and microsolvated clusters, ACS Fall
- Benchmarking the accuracy of free energy landscapes generated by adaptive sampling strategies, CECAM, Mixed-gen Session 6: Activated Events
 - Reducing the error of redox potential calculations in implicit and explicit solvents with machine learning, ACS Fall
- Deep learning of molecular dynamics representations, Emory Machine Learning in Chemistry Journal Club

Bookchapter

Quantum Chemistry in the Age of Machine Learning, 1st Edition, Elsevier, Chapter 6: Machine learning: An overview, **Eugen Hruska**, Fang Liu, Editor: Pavlo Dral, ISBN: 9780323900492

Awards

2012 Student award, German Physical Society

High School

- Gold medal, International Physics Olympiad, top high school physics competition, top 50 in world
- 2011 Gold medal and Best Experiment, World Physics Olympiad
- Gold medal, International Junior Science Olympiad, top science competition aged 15 and under
 - 2010 Ronze medal, International Biology Olympiad, top high school biology competition
 - 2009 | Bronze medal, International Young Physicists' Tournament

Research grants

2024 PRIMUS24/MED/004 startup grant "Quantitative prediction of drug metabolism", awarded, PI

Computational grants

- 2024 TT4I, OPEN-30-9, Karolina 778 NH, awarded, PI
- 2023 TT4I, OPEN-27-38, Karolina 3500 NH, awarded, PI
- XSEDE, TG-CHE200099, Bridges2 GPU 9888 SUs, awarded, Co-PI
- 2020 Summit, CHM179, 13000 NH, awarded, PI
- 2019 Summit, BIP191, 25000 NH, awarded

Education

2014 – 2020 Ph.D., Physics, Rice University, USA

Thesis title: Adaptive sampling of Conformational Dynamics

Advisor: Cecilia Clementi

2011 – 2014 **Regensel Bachelor**, Biochemistry, University of Regenselurg, Germany

Bachelor, Technical Physics, Ilmenau University of Technology, Germany

Thesis title: NMR-spectroscopic Analysis of Interaction between Polycystin-2 and mDia1 Advisor: Hans R. Kalbitzer

Teaching

2015 - 2016

2023 - · · · ·	Applied Statistics, Applied Computer Technology, Physical Chemistry, Mathematics, Biophysics, Introduction to python for pharmacists, Machine learning for pharmaceutical science, Charles University
2021	CHEM531 1 lecture, Emory University
2020	Certificate in Teaching and Learning, Rice University

Public Outreach

Coach for U.S. Physics Team preparing top 20 US high school students representing USA in high school level international physics competition

■ Taste of Science organizing scientific outreach events for the general public

PHYS 101, 102, Teaching Assistant, Rice University

Mentor
preparing promising students for high school international science competitions

Other

Coding Python: pytorch (machine learning, GPUs), sklearn (machine learning), pyemma (markov state models), openmm (molecular dynamics), TeraChem (DFT on GPUs), bash, Łeta