Michael Strafford Scholz

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Summary

I am a highly motivated scientist with a background in experimental physical chemistry. My research involves lab work, data analysis, physical simulation, and software development. I am passionate about developing and employing new technologies to solve physical problems.

Experience

2020– **Postdoctoral Research Fellow**, *University College London, London, United Kingdom*.
Developed an algorithm to model inelastic scattering of low-energy electrons in water, implemented in Julia. Introduced use of Python and Jupyter notebooks to experimental research group for data analysis. Interfaced lasers and electron spectrometers to PCs and built data acquisition interface with LabVIEW. Performed molecular dynamics simulations of small molecules in water on HPC clusters.

2016–2021 **Graduate Research Assistant**, *University of Melbourne, Melbourne, Australia*.
Built prototype time-of-flight mass spectrometer detection system using a PC-interfaced oscilloscope in LabVIEW. Maintained in-house mass spectrum analysis software in Matlab. Performed quantum chemical calculations on HPC clusters.

Education

2016–2021 **Doctor of Philosophy in Chemistry**, University of Melbourne, Parkville.
Thesis: *Electronic spectroscopy and structure of gas-phase ions*
Advisor: Professor Evan Bieske.

2012–2015 **Bachelor of Science (Honours) in Chemistry**, University of Melbourne, Parkville.
Thesis: *Collisional activation of ions in a tandem drift tube ion mobility mass spectrometer*

Publications and talks

- **Academic papers:** 22 peer-reviewed publications, 2 as first author, in journals such as Physical Review Letters, Angewandte Chemie, and the Journal of Physical Chemistry Letters, *h*-index of 10
- **Talks and seminars:** 3 conference talks, 6 university seminars, 5 conference posters

Skills and knowledge

- **Programming languages:** Julia, Python (inc. Numpy, Scipy, Matplotlib), LabVIEW, (ba)sh
- **Other software:** Data analysis (inc. Jupyter), high-performance computing, quantum chemistry packages (inc. Gaussian, PySCF), molecular dynamics, lab hardware interfacing, git, Github, and version control
- **Lab hardware:** Nanosecond and femtosecond lasers, mass spectrometry, ion and molecular beams, electron spectroscopy, ultrafast delay lines
- **Soft skills:** Team management, academic paper and technical report writing
- **Spoken languages:** English (native), German (A2), Japanese (A1)
- **Other interests:** Cycling, cooking, hiking, camping