

David Sinden

Contact

Max-Planck-Str. 43
28357 Bremen
Germany

+49 176 343 68520

david.sinden@gmail.com

Links

home: djps.github.io

github: [djps](https://github.com/djps)

linkedin: [sindendavid](https://www.linkedin.com/in/sindendavid)

twitter: [@david_sinden](https://twitter.com/david_sinden)

Languages

English: native, German: B2.1

Programming

scientific programming: C++,
python, matlab, fortran, java

computational: FEniCS, Comsol

accelerators: openCL, numba,
cupy

libraries: ITK, VTK, boost, eigen

Tools

version control: git, svn

CI/CD: github, gitlab

testing: google test, pytest

documentation: sphinx,
doxygen

build systems: make, cmake,
visual studio

Skills

Innovative applied mathematician with a strong track record in scientific computation, with over 15 years' experience working in applied research with a focus **numerical modelling** applied to medical interventions. Looking for new opportunities.

- Formulates realistic yet tractable mathematical models, and associated deployable, tested and documented simulations. Excellent coding and software development skills developed through deployment into clinical and commercial environments, satisfying ISO 13485 standard.
- Communication skills refined through working in multi-disciplinary, international teams at the interface of academic research and industry; lecturing and teaching at universities; delivering invited presentations at international conferences.
- 17 peer-reviewed journal papers (with over 250 citations), 1 book chapter, acquisition of grants (~500,000€), 12 invited presentations, industrial supervisor to three PhD students, an MSc student, and maintainer of widely used open source code, k-wave-python

Experience

- 2019– **Fraunhofer Institute for Digital Medicine MEVIS** Bremen, Germany
Senior Research Scientist - Modelling and Simulation Group
- Developed large-scale yet clinically relevant thermal ablation simulations for microwave and ultrasound therapies.
 - Fast ultrasound beamforming algorithms, developed simulator for transcranial acoustic/elastic propagation for imaging.
- 2014–2019 **National Physical Laboratory** Teddington, United Kingdom
Senior Research Scientist - Medical Ultrasound Group
- Established measurement-based simulation for nonlinear propagation through complex media for accurate predictions, included in IEC standard.
- 2011–2014 **Institute of Cancer Research/The Royal Marsden Hospital** Sutton, United Kingdom
Post-Doctoral Research Associate - Focused Ultrasound Group
- Development of ultrasound-guided high-intensity focused ultrasound treatment planning system with a multi-element phased-array.
- 2008–2011 **University College London** London, United Kingdom
Post-Doctoral Research Associate - Dept. Mechanical Engineering
- Investigation of influence of cavitation on therapeutic ultrasound treatment.

Education

- 2004–2008 **PhD - Dynamical Systems** University College London
“Integrability, Localisation and Bifurcation of an Elastic Conducting Rod in a Uniform Magnetic Field”, (Advisor: Prof. Gert van der Heijden)
- 2003–2004 **MSc - Modern Applications of Mathematics** University of Bath
- 2000–2003 **BSc - Mathematics with Appl. Math./Math. Phys.** Imperial College London

Awards & Esteem Indicators

- 2020 **IEEE IUS Challenge on Ultrasound Beamforming with Deep Learning (CUBDL)**
Joint first place in IEEE IUS Challenge for “Improving image quality of single plane wave ultrasound via deep learning based channel compounding” (2020)
- 2015– **International Expert**
Member of IEC Technical Committee 87 (Ultrasonics), BSI
- Various **EPSRC Enhanced Scholarships**
Enhanced funding for MSc (2004), PhD (2008) and post-doctoral work (2014)