Jessica J. Kent

Applied Mathematician

ABOUT ME :

I am a passionate applied mathematician interested in the intersection between mathematics, physics, programming and real world challenges.

CONTACT

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Sheffield, South Yorkshire

EDUCATION

PhD Mechanical Engineering,
University of Sheffield,
2021 - 2025
Expected completion: March 2025

Mathematics (MMATH),
University of Sheffield,
First Class
2017 - 2021

SKILLS

Mathematical Modelling
Numerical Analysis and Simulation
Programming (Julia, Python, MATLAB)
Public Speaking
Scientific Writing

REFERENCES

Dr Artur L Gower;
Senior Lecturer in Dynamics;
University of Sheffield;
07518 027295;
arturgower@gmail.com;
PhD supervisor/co-author

Mr Matheus de C Loures;
PhD researcher;
University of Sheffield;
07502 228511;
mdecarvalholoures1@sheffield.ac.uk;
Colleague/co-author

WORK EXPERIENCE

PhD Researcher, 09/2021-Present

University of Sheffield, Sheffield

Responsibilities include:

- Mathematical modelling;
- Writing research papers;
- Software development and numerical simulations;
- Presenting research at conferences.

Accomplishments:

- Conference and journal papers submitted;
- Supervising summer ray theory project in collaboration with DSTL;
- Development of ElasticWaves.jl and RayTracing.jl Julia libraries;
- Presented research at conferences and academic meetings, including BAMC; Elasticity day; IEEE Ultrasonics meeting.

Graduate Teaching Assistant MEC21001, 01/2022 - 06/2024

University of Sheffield, Sheffield

Responsibilities include:

- Leading tutorial sessions;
- Helping students with MATLAB;
- Proof reading and testing MATLAB exam;
- Answering questions on module discussion forum.

PUBLICATIONS

Kent, J.J., De Carvalho Loures, M., and Gower, A. L., *'Elastic waves in bearing raceways: the forward and inverse problem'* (arXiv; under review for publication in Proceedings A of the Royal Society)

Kent, J. J., De Carvalho Loures, M., and Gower, A. L., *'A tomographic method to predict forces in a rolling element bearings'*, Proceedings of ISMA 2024, pp. 1508-1519