Elisabeth **Lane**

COMPUTER SCIENCE PHD CANDIDATE · MACHINE LEARNING · COMPUTER VISION

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Research Interests and Experience

24 months' research experience in the field of Machine Learning and Computer Vision for medical imaging. Proven success in solving complex problems; applying Deep Learning methods to produce accurate, reproducible algorithms for human task automation. Research published in well-regarded Academic journals and findings presented at Medical Imaging with Deep Learning (MIDL) conference, 2021. Adept at building data processing pipelines, knowledge of Python and Tensorflow programming, network training and optimisation, visualisation and analysis of results. Passionate about research and building Machine Learning solutions beyond the state-of-the-art. Excellent communication, teamwork and English skills.

Key Skills

Machine Learning Algorithms • Computer Science Fundamentals • Data Visualisation • Data structures • Algorithmic Design • Dissemination of Results • Academic Writing • Presenting • Training & Mentoring • Teamwork

Technical Skills

- **Tools**: Python, Tensorflow, Keras, Anaconda, Linux, SQLAlchemy, Google Colaboratory, Jupyter Notebook, Spyder, Docker
- **Packages**: NumPy, SciPy, scikit-learn, Pandas, Matplotlib, PIL, Open-CV, ffmpeg, Imgaug, Flask, Jinja2
- **Statistical & Machine Learning**: Model development, Transfer learning, Performance optimisation, Supervised & unsupervised learning, Data pre- and post-processing, Visualisation, Regression, Clustering & Classification, Segmentation, Object detection, Key point localisation, Quantitative analysis: Bland-Altman, Confusion matrix, Statistical variability analysis

Education

University of West London — *London*

PHD COMPUTER SCIENCE — *Sept 2019 - Ongoing*

- Recipient of Vice Chancellor's PhD scholarship

University of West London — *London*

MSC SOFTWARE ENGINEERING — *Sept 2018 - Sept 2019*

- Graduated with Distinction

University of Southampton — *Southampton*

POST-GRADUATE CERTIFICATE OF EDUCATION (PGCE), COMPUTER SCIENCE — *Sept 2011 - Sept 2012*

- Awarded Qualified Teacher Status (QTS)

University of York St John — *York*

BA HONS MANAGEMENT STUDIES — *Sept 2004 - Sept 2007*

Professional Experience

University of West London — *London*

RESEARCH & TEACHING ASSISTANT — *Sept 2019 - Ongoing*

- Lecture undergraduate students in AI and ML
- Mentor junior PhD candidates in growing both their technical and collaborative skills
- Represent research group at University & external events

The Godolphin and Latymer School — *London*

Teacher of Computing (part-time) — *Oct 2019 - Ongoing*

- Assist in the delivery of technical specification content
- Supervise development of full-stack web application A-Level project
- Teach python programming to girls aged 11-18

The Marist School — *Ascot*

Head of Computing — *Mar 2018 - Sept 2019*

- Lead Computing department and manage staff
- Responsible for whole-school STEM strategy
- Plan and deliver extra-curricular and community outreach initiatives

Queen's College, Harley Street — *London*

Computing Co-ordinator — *Sept 2014 - Mar 2018*

- Introduce Computer Science and STEM to the school
- Lead the department and staff IT training

Bohunt School — *Hampshire*

Teacher of Computing — *Sept 2012 - Sept 2014*

- Plan and deliver inspiring Computing schemes of work
- Run extra-curricular clubs

The FES Group, York — *York*

Sustainability Consultant — *Aug 2007 - Sept 2011*

- Assessment of building energy efficiency in the residential and domestic sectors

Publications and Conferences

2021	**Multibeat echocardiographic phase detection using deep neural networks**, Elisabeth S Lane, Neda Azarmehr, Jevgeni Jevsikov, James P Howard, Matthew J Shun-Shin, Graham D Cole, Darrel P Francis, Massoud Zolgharni	*Computers in Biology & Medicine*
2021	**Echocardiographic Phase Detection Using Neural Networks**, Elisabeth S Lane, Neda Azarmehr, Jevgeni Jevsikov, James P Howard, Matthew Shun-shin, Darrel P Francis, Massoud Zolgharni	*MIDL*
2021	**Neural architecture search of echocardiography view classifiers**, Neda Azarmehr, Xujiong Ye, James P Howard, Elisabeth S Lane, Matthew J Shun-Shin, Graham D Cole, Luc Bidaut, Darrel P Francis, Massoud Zolgharni	*Journal of Medical Imaging*
2021	**Automated Multibeat Tissue Doppler Echocardiography Analysis Using Deep Neural Networks**, Elisabeth S Lane, Neda Azarmehr, Jevgeni Jevsikov, James P Howard, Matthew Shun-shin, Darrel P Francis, Massoud Zolgharni [Submitted]	*Computers in Biology & Medicine*