



## PROFILE

A creative, well-presented and resourceful research scientist focusing on applications of deep learning and vision in healthcare. Former live music agent and project manager. I possess excellent communication skills, enthusiasm and an exceptional work ethic driven by a deep-rooted passion for altruistic, forward thinking technology.

## EDUCATION

**Queen Mary University Of London** (2022-Present) : PhD. AI-based Cardiac Image Computing

- Research: Temporal alignment of non-linear videos, 3D reconstruction of coronary vessels, semantic segmentation using graph neural networks, segmentation using joint dense-point representations, polygon-based segmentation.
- Supervision: Qianni Zhang (QMUL), Greg Slabaugh (QMUL), Christos Bourantas (QMUL / Barts NHS)

**Queen Mary University Of London** (2021) : MSc Data Science & Artificial Intelligence.

- Research: Deep Learning for Small Bowel Motility Assessment in Crohn's Patients.
- Supervision: Prof Greg Slabaugh (QMUL) and Dr Asma Fikree (Royal Hospital London NHS)
- Grade: Distinction (90%)

**University Of Sussex** (2011-2015) : BSc (Hons) Chemistry. 2:1 class

## PUBLICATIONS (first-author)

- **K.Bransby\***, A.Beqiri, W.Cho Kim, J.Oliviera, A.Chartsias, A.Gomez. - MICCAI (2024) - "BackMix: Mitigating Shortcut Learning in Echocardiography with Minimal Supervision"
- **K.Bransby\***, G.Slabaugh, C.Bourantas, Q.Zhang. - MICCAI (2023) - "Joint Dense-Point Representation for Contour-Aware Graph Segmentation"
- **K.Bransby\***, V. Tufaro, M.Cap, P.Kitslaar, H.Reiber, G.Slabaugh, C.Bourantas, Q.Zhang. - ISBI (2023) - "3D Coronary Vessel Reconstruction from Bi-Plane Angiography using Graph Convolutional Networks."

## SKILLS

- Python (4yr experience) + data science packages (*Sklearn, Pandas, Numpy* etc)
- Deep learning frameworks (*Pytorch, Tensorflow*) and image processing (*OpenCV, PIL, SITK, VTK*)
- Extensive network building experience (*CNN, Graph, RNN, Transformer*) for tasks such as classification, reconstruction, segmentation, object detection, registration.
- Software Engineering: git, bash, linux, cloud-based GPUs, Azure
- Experience with large high-dimensional image datasets (e.g *X-ray, RGB, Ultrasound, 3D, Mesh, DICOM*)

## EXPERIENCE

**Research Intern** (2024) : 6-month internship at Ultromics, a start-up developing AI for echocardiography analysis.

- Research: Shortcut learning, Out-of-distribution detection, Class Incremental learning.

**Teaching Fellow & Demonstrator** (2022-), Queen Mary University of London

- Thesis project supervision for 8 BSc and 10 MSc students. Run tutorials and give occasional lectures on the Information Retrieval (ECS736P) module.
- Additional lab demonstration for MSc modules: Neural Networks and Deep Learning (Dr. Yorgos Tzimiropoulos), Information Retrieval (Dr. Qianni Zhang), Data Mining (Dr. Emmanouil Benetos), Python Programming

## References:

Dr Qianni Zhang - Senior Lecturer at Queen Mary University London - [qianni.zhang@qmul.ac.uk](mailto:qianni.zhang@qmul.ac.uk)

Prof Greg Slabaugh - Professor of Computer Vision and AI at Queen Mary University London - [g.slabaugh@qmul.ac.uk](mailto:g.slabaugh@qmul.ac.uk)