emmanuelle.bourigault@dtc.ox.ac.uk

Emmanuelle Bourigault PhD Student.

Education

Department of Engineering, University of Oxford United Kingdom
Ph.D. in Engineering 2021 - 2025

- Advisor: Prof. Andrew Zisserman
- Research area: Computer Vision, Medical Image Analysis, Domain Adaptation, 3D Reconstruction, Computational Geometry

Department of Engineering, Imperial College London United Kingdom
Msc in Translational Neurosciences 2019 - 2020

- Research Project: Neuron Tracking on Microscopy Images

Faculty of Mathematics and Physics, University College London United Kingdom
Bsc in Mathematics/Statistics and Neuroscience 2016 - 2019

Publications

1. **Emmanuelle Bourigault**, Abdullah Hamdi, Amir Jamaludin. UKBOB: One Billion MRI Labels is All You Need for 3D Medical Image Segmentation. *ArXiv*, 2024.
2. **Emmanuelle Bourigault**, Amir Jamaludin, Andrew Zisserman. Estimating 3D Shape of Spine from 2D DXA. **Oral**. *International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI)*, 2024.
3. **Emmanuelle Bourigault**, Abdullah Hamdi, Amir Jamaludin. X-Diffusion: Generating Detailed 3D MRI Volumes From a Single Image Using Cross-Sectional Diffusion Models. *ArXiv*, 2024.
4. Pauline Bourigault, **Emmanuelle Bourigault**, Danilo Mantic. Multi-Modal Information Bottleneck Attribution with Cross-Attention Guidance. *The British Machine Vision Conference (BMVC)*, 2024.
5. **Emmanuelle Bourigault**, Pauline Bourigault. MVDiff: Scalable and Flexible Multi-View Diffusion for 3D Object Reconstruction from Single-View. *Workshop in Generative AI, Computer Vision and Pattern Recognition (CVPR)*, 2024.
6. **Emmanuelle Bourigault**, Amir Jamaludin, Emma M. Clark, Jeremy Fairbank, Andrew Zisserman. Estimating 3D Shape of Spine from 2D DXA. **Oral**. *Shape AI Workshop, MICCAI*, 2023.
7. **Emmanuelle Bourigault**, Amir Jamaludin, Timor Kadir, Andrew Zisserman. Scoliosis Measurement on DXA Scans Using a Combined Deep Learning and Spinal Geometry Approach. *Medical Imaging and Deep Learning (MIDL)*, 2022.
8. **Emmanuelle Bourigault**, DR McGowan, A. Mehranian, BW Papiez. Multimodal PET/CT tumour segmentation and prediction of progression-free survival using a full-scale UNet with attention. *Head and Neck Challenge, MICCAI*, 2021.

Internships

Netdevices | Paris, France 2020.06 - 2020.09
- Improve data management using AI and application to hospitals

Michael Hausser Lab | UCL, United Kingdom 2017.03 - 2019.06
- Develop virtual reality models for spatial navigation using Python

Hugo Spiers Lab | UCL, United Kingdom 2018.06 - 2018.08
- Improve spatial navigation app to detect early signs of dementia using Python/Matlab programming

Conferences

MICCAI | Marrakech, Morocco 2024.10
- Oral Presentation on 3D Spine Shape Estimation from 2D DXA Scan. Poster Presentation.

CVPR | Seattle, USA 2024.06
- Poster presentation on improving multi-view consistency in diffusion model for 3D reconstruction. Participation to workshops in Generative AI, and Vision-Language Transformers

MICCAI | Vancouver, Canada 2023.10
- Oral presentation on deep learning pipeline for improved understanding of spine geometry in 3D

ICCV | Paris, France 2023.09
- Participation to Workshops in Generative AI, Object Detection and Segmentation with Limited Labels, Natural Language Processing

Cortel Symposium | Paris, France 2023.09
- Presentation of my work done on automated measurement of scoliosis on 48, 384 paired data DXA-MRI from the UK Biobank to surgeons and bioengineers. Good opportunity to receive feedback and interact with clinicians on leveraging AI for improving scoliosis diagnosis.

MIDL | Zurich, Switzerland 2022.08
- Poster Presentation on scoliosis automated measurement using active learning for pseudo-label generation with limited labels and handling domain gap.

MICCAI | Luxembourg, France 2021.10
- Presentation of my paper to Head & Neck Segmentation Challenge.

Awards and Honors

- **Prize Best Student Project**, SABS R3, University of Oxford 2021
- **Laidlaw Research Scholarship**, University College London 2016-2019

Skills

Programming: `Python`, `C++`, `MATLAB`, `R`. **Languages:** French, English, Spanish.

Academic Services

Reviewer for: *ICLR, MICCAI, ECCV, BMCV, WACV*