

# YUSUF ABDULLE

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## EDUCATION

### King's College London

*PhD Biostatistics and Health Informatics*

**2024 - 2028**

📍 London, UK

### University College London

*MSc Clinical Neuroscience – Merit*

**2020 - 2021**

📍 London, UK

### University of Brighton

*BSc (Hons) Biomedical Science – First Class Honours*

**2017 - 2020**

📍 Brighton, UK

## EXPERIENCE

### Research Assistant

*University College London*

**Sep 2023 — Sep 2024**

📍 London, UK

- Applied novel Graph Machine Learning techniques to Knowledge Graphs and real-world, large-scale Electronic Health Records to enable early neurodegenerative disease diagnosis.
- Worked on analysing and addressing AI-induced health disparities across racial, gender, age, and socioeconomic groups, with a focus on creating tools for quantification and mitigation.
- Provided mentorship and supervision for undergraduate students and interns, offering guidance on research projects.

### Translational Data Scientist

*BioCorteX*

**Oct 2022 — Apr 2023**

📍 London, UK

- Helped to design a first-principle computer simulation to identify potential pitfalls in clinical trials thereby improving patient treatment response and reducing trial associated costs.
- Developed and deployed an automated benchmarking tool to production that predicted DNA sequences against known databases resulting in a change in approach for internal engines to improve prediction results.

### Research Assistant

*University College London*

**Sep 2021 — Oct 2022**

📍 London, UK

- Designed and built a Graph Neural Network using the PyTorch Geometric and Deep Graph Library packages in Python to classify adjacency matrices derived from MRI scans of individuals living with Frontotemporal Dementia and Amyotrophic Lateral Sclerosis into disease and non-diseased to better identify early intervention for clinical trials.
- Worked with AWS EC2 instances to mass process 3T MRI scans and store in S3 buckets, saving weeks of processing time.
- Collaborated with external stakeholders (Haleon) to develop mathematical models for healthcare systems with a mix of approaches including Monte Carlo and Markov Chain processes to improve patient flow in healthcare pathways.

### Clinical Research Assistant

*Royal Free NHS Foundation Trust*

**Oct 2020 — Sep 2021**

📍 London, UK

- Worked in a multidisciplinary team consisting of clinical researchers, clinicians, nurses to ensure successful delivery of various COVID vaccines (Novavax, Moderna and Valneva)
- Compiled documentation necessary for clinic visits, monitoring visits, and audits and contributed to academic oncology research initiatives.

## SCHOLARS AND AWARDS

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EPSRC Centre for Doctoral Training in Data-Driven Health (DRIVE-Health)

September 2024

Santander Summer Studentship

August 2019

## JOURNAL ARTICLES

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**1. Enhancing Human-Computer Interaction in Chest X-ray Analysis using Vision and Language Model with Eye Gaze Patterns**

Kim, Y., Wu, J., Abdulle, Y., Gao, Y., Wu, H. (2024). Human-in-the-Loop Chest X-Ray Diagnosis: Enhancing Large Multimodal Models with Eye Fixation Inputs. In: Chen, H., Zhou, Y., Xu, D., Vardhanabhuti, V.V. (eds) Trustworthy Artificial Intelligence for Healthcare. TAI4H 2024. Lecture Notes in Computer Science, vol 14812. Springer, Cham. [https://doi.org/10.1007/978-3-031-67751-9\\_6](https://doi.org/10.1007/978-3-031-67751-9_6)

**2. MedExQA: Medical Question Answering Benchmark with Multiple Explanations**

Kim, Y., Wu, J., Abdulle, Y., & Wu, H. (2024). MedExQA: Medical Question Answering Benchmark with Multiple Explanations. arXiv preprint arXiv:2406.06331.

**3. Understanding neck collar preferences and user experiences in motor neuron disease: A survey-based study**

Spears, S. D., Abdulle, Y. F., Lester, T., Torii, R., Kalaskar, D. M., & Sharma, N. (2024). Understanding neck collar preferences and user experiences in motor neuron disease: A survey-based study. *Disability and Health Journal*, 101585.

**4. Benchmarking and Analyzing In-context Learning, Fine-tuning and Supervised Learning for Biomedical Knowledge Curation: a focused study on chemical entities of biological interest**

Groves, E., Wang, M., Abdulle, Y., Kunz, H., Hoelscher-Obermaier, J., Wu, R., & Wu, H. (2023). Benchmarking and Analyzing In-context Learning, Fine-tuning and Supervised Learning for Biomedical Knowledge Curation: a focused study on chemical entities of biological interest. *arXiv preprint arXiv:2312.12989*.

**5. Scoping review of knowledge graph applications in biomedical and healthcare sciences.**

Budhdeo, S., Zhang, J., Abdulle, Y., Agapow, P. M., McKechnie, D. G., Archer, M., ... & Sharma, N. (2023). Scoping review of knowledge graph applications in biomedical and healthcare sciences. *medRxiv*, 2023-12.

**6. Neck Collar Assessment for People Living with Motor Neuron Disease: Are Current Outcome Measures Suitable?**

Spears, S. D., Abdulle, Y. F., Korovilas, D., Torii, R., Kalaskar, D. M., & Sharma, N. (2023). Neck collar assessment for people living with motor neuron disease: are current outcome measures Suitable?. *Interactive Journal of Medical Research*, 12(1), e43274.

## Conference Posters and Presentations

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**1. Using a PET atlas to probe neurotransmitter-disease associations in Mild Cognitive Impairment and Alzheimer's disease.**

📍 Budapest, Hungary  
9th EAN Congress, 1-4 July 2023.

**2. Using a PET neurotransmitter atlas to probe associations in Alzheimer's disease and MCI.**

📍 Vancouver, Canada  
2023 OHBM Annual Meeting

### 3. Foundation Models For Medical Imaging (FOMMIA) - Organiser

📍 Marrakesh, Morocco  
2024 MICCAI

#### Skills

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- **Languages:** English, Somali
- **Programming Languages:** Python, R, Bash
- **Libraries:** PyTorch, TensorFlow, Scikit-Learn, NumPy, Pandas, Matplotlib, Seaborn, PyTorch Geometric, NetworkX
- **Technologies:** Git, PostgreSQL, AWS, GCP