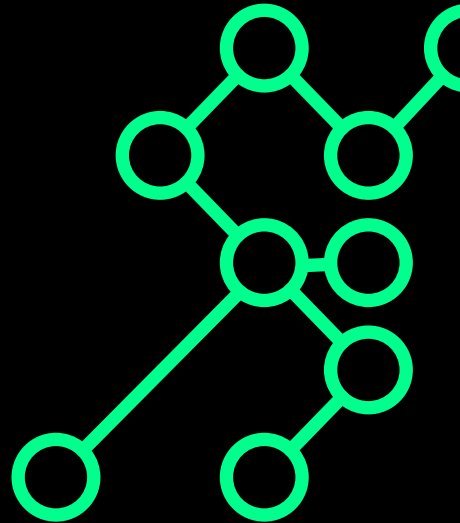




Orthopaedic
Research UK

AI in orthopaedics



In association with



British Orthopaedic
Association

Date: 6—7 November 2023

CPD: 10 credits (applied for)

Venue for day 1's educational workshop:
The Medical Society of London

Venue for day 2's AI conference:
The Royal Society of Medicine



#Alinortho

AI in orthopaedics... the second national conference from Orthopaedic Research UK (ORUK)

Day 1 is a basic level educational workshop for non-specialist AI users



Monday 6 November 2023, 14:30 – 20:00



The Medical Society of London

Lettsom House, Chandos Street, London, W1G 9EB

Places on the workshop will be limited to 40 in-person attendees, so early booking is strongly recommended.

Day 2 is the AI conference where all clinicians, scientists, engineers and industry experts are welcome to attend



Tuesday 7 November 2023, 09:00 – 19:00



Royal Society of Medicine

1 Wimpole Street, London, W1G 0AE

Introduction

Following the success of last year's inaugural conference, ORUK is delighted to be organising the second national conference on 'AI in orthopaedics' on Tuesday 7 November.

In addition, this year we will also be running a pre-conference workshop on 'Basic education in AI and ML with emphasis in its use in orthopaedics' for non-specialist AI users, on Monday 6 November.

The programme will reflect the feedback from last year and be based around:

- Education in the principles and practice with AI and machine learning for non specialist AI users (Pre-conference workshop on 6 November)
- Podium presentations from practitioners in the field, with emphasis on results of using AI (both positive and negative)
- The challenges including issues around governance and consent
- Key note presentations from funders, regulators and experts from abroad
- Key note presentations from experts in allied specialities and some experienced practitioners from abroad, who have been working with AI and from whom we can learn

Call for abstracts

Clinicians, scientists and technologists are invited to submit abstracts for oral and poster presentation. Find out more here: <https://bit.ly/Alabs23>


We are most grateful for the support of our sponsors

Platinum sponsor



Silver sponsor





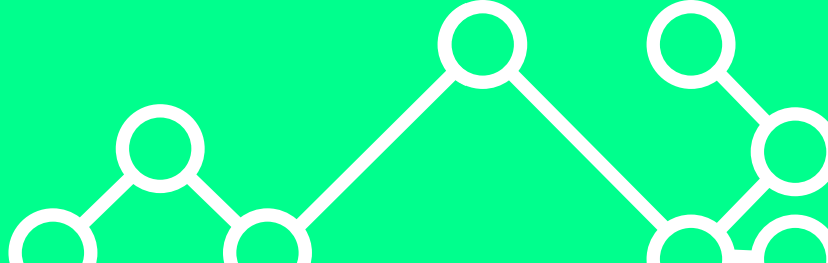
Workshop programme (Only 40 spaces available)

Day 1: Monday 6 November

Workshop: Basic education in AI and ML with emphasis on its use in orthopaedics.
Requirement: Please bring along a laptop and mobile to participate during workshop.

14:30	Registration and refreshments
15:00	Welcome
SESSION 1: BACKGROUND	
	Introduction and history of AI
	Different types of AI: From linear regression to deep learning
	Introduction to computer vision
	Q&A
SESSION 2: REAL WORLD APPLICATIONS	
	What role does AI have in orthopaedics
	Q&A
SESSION 3: PRACTICAL CONSIDERATIONS FOR SETTING UP AI IN AN NHS HOSPITAL	
	How to set up AI in an NHS hospital
	Q&A
SESSION 4: PRINCIPLES	
	Data collection and preparation
	Feature selection and engineering
	Model selection and evaluation
	Introduction to deep learning
	Q&A
SESSION 5: IMPROVING, DEPLOYMENT AND MONITORING	
	Hyperparameter tuning and optimisation
	Deployment and monitoring
	Q&A
Refreshments	
SESSION 6: PRACTICAL REQUIREMENTS FOR CARRYING OUT AI	

Please note this programme is subject to change.



	Appropriate hardware
	Virtualisation or on-premises?
	Q&A
	SESSION 7: CODING
	What is meant by coding
	Beginner's experience
	Basic principles of python coding for AI
	Q&A
	SESSION 8: YOUR SET-UP
	Setting up the environment
	How to interpret the results?
	Q&A
	SESSION 9: PRIZES
	Worked examples of image analysis using deep learning
	Python
	Q&A
	Round up: Best practices for the implementation of an AI programme
	Q&A
20:00	Close of workshop

Workshop teaching faculty includes:

Mr Mustafa Alnaib, Musculoskeletal Doctor and Clinic Director,
ACTIVATE - Musculoskeletal Clinic

Mr Vipin Asopa, Consultant Orthopaedic Surgeon (Academic Surgical Unit), South West London
Elective Orthopaedic Centre

Professor Philip Breedon, Professor of Smart Technologies, Nottingham Trent University

Professor Richie Gill, Chair of Healthcare Engineering, University of Bath

Dr Justin Green, Orthopaedic Registrar, Northumbria Healthcare Trust and ORUK / BHS Research
Fellow

Mr Peter Harris, Research Team Lead, Nielsen IQ

Mr Richard Hewitt, Principal Business Consultant, NEC Software Solutions

Professor Deairy Kader, Consultant Orthopaedic Surgeon, South West London Elective Orthopaedic
Centre

Professor Kia Nazarpour, Professor of Digital Health, The University of Edinburgh

Professor Ferrante Neri, Professor of Machine Learning and Artificial Intelligence,
University of Surrey

Professor Mike Reed, Consultant Orthopaedic Surgeon, Northumbria Healthcare NHS Foundation
Trust

Mr Amit Sagi, EFORT Fellow, Epsom and St Helier University Hospitals NHS Trust

Mr Keith Tucker, Trustee, Orthopaedic Research UK

Professor Yi-Zhe Song, Co-Director Surrey Institute for People-Centred AI; Programme Lead of MSc
in Artificial Intelligence, University of Surrey

Professor J Mark Wilkinson, Professor of Orthopaedics, University of Sheffield

Please note this programme is subject to change.



Conference programme

Day 2: Tuesday 7 November

09:00 **Registration and refreshments**

09:30 **Welcome**

Mr Keith Tucker, Trustee, Orthopaedic Research UK

SESSION 1: FREE PAPERS (8 MINUTES EACH)

AI and how it worked for me (or did not work!)

Chairs: Professor Kia Nazarpour & Professor Mike Reed

Presentation 1

Presentation 2

Presentation 3

Presentation 4

Presentation 5

Discussion

SESSION 2

Chairs: Professor John Skinner & Mr Keith Tucker

The latest initiatives from His Majesty's government

George Freeman, MP (TBC)

How can we help NHSE

Speaker to be confirmed

Update from the NHS AI Lab

Mr Dominic Cushnan, Director of AI, Imaging and Deployment, NHS
Transformation Directorate

Discussion

Refreshments and exhibition

SESSION 3: FREE PAPERS (8 MINUTES EACH)

AI and how it worked for me (or did not work!)

Chairs: Professor Richie Gill & Professor J Mark Wilkinson

Presentation 1

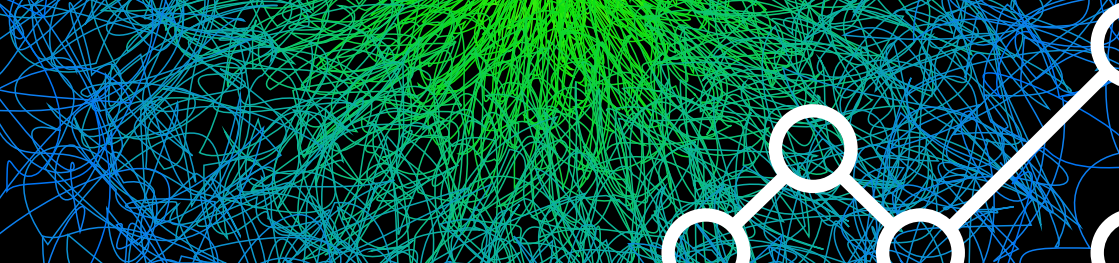
Presentation 2

Presentation 3

Presentation 4

Presentation 5

Please note this programme is subject to change.



Discussion

SESSION 4: EXPERIENCES FROM DISCIPLINES

Chairs: Professor Rob Nelissen & Professor Alan Fraser

CORE MD AI from a cardiologist

Professor Frank Rademakers, Emeritus Professor, KU Leuven, Belgium

The path and the challenges in developing ML for retinal screening

Mr Richard Hewitt, Principal Business Consultant, NEC Software Solutions

Building a global AI company from scratch

Mr Manoj Ramachandran, Co-founder – Halfloop, Co-founder – Viz.ai and Consultant Orthopaedic and Trauma Surgeon, Barts Health

Update from Microsoft

Ms Anna Dijkstra, Innovation Director, UK Healthcare & Life Sciences, Microsoft

Discussion

Lunch and exhibition

SESSION 5: FREE PAPERS (8 MINUTES EACH)

AI and how it worked for me (or did not work!)

Chairs: Professor Deirdre Kader & TBC

Presentation 1

Presentation 2

Presentation 3

Presentation 4

Presentation 5

Discussion

SESSION 6: GOVERNANCE

Chairs: Mr Vipin Asopa & Professor Caroline Hing

Consent

Mr Taj Sallamuddin, Lawyer, Information Governance Services Limited

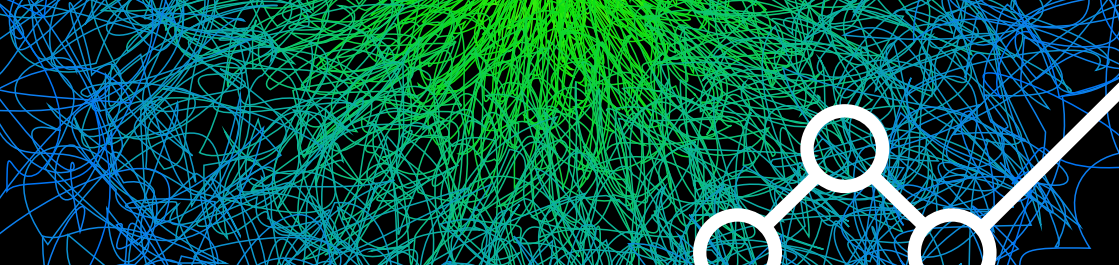
MHRA, the rules, the UKCA

Speaker to be confirmed

Health Research Authority / Research Ethics Service

Ms Charlotte Allen, Quality and Performance Manager, Health Research Authority

Please note this programme is subject to change.



Caldicott Guardians

Mr Vipin Asopa, Consultant Orthopaedic Surgeon (Academic Surgical Unit), South West London Elective Orthopaedic Centre

Obtaining data for ML AI from PACS

Mr Daniel Jones, Business Director – UKI, GLEAMER

The challenge of AI from a PACS perspective

Mr Andy Scott, Imaging IT Systems Manager / PACS Manager,
Milton Keynes University Hospitals NHS Foundation Trust

Discussion

Refreshments and exhibition

SESSION 7: FUNDING

Chairs: Professor Ferrante Neri & TBC

Update from ORUK

Dr Arash Angadji, CEO, Orthopaedic Research UK

Update from NIHR

Dr Helen Compton, Stakeholder Engagement Manager, Innovations Directorate, NIHR

NHS Horizon: Maximizing the success of your innovation

Mr Tom Underwood, Project Manager, NHS Horizons

Big data: building and funding patient-powered platforms

Mr Manoj Ramachandran, Co-founder – Halfloop, Co-founder – Viz.ai and
Consultant Orthopaedic and Trauma Surgeon, Barts Health

Discussion

SESSION 8: Can you trust AI?

Chairs: Professor Fares Haddad & Professor John Skinner

How the newspapers and professional journals can help?

The evidence that AI and ML save money and increase efficiency

Discussion

SESSION 9: PRIZES

Announcement of the winner of the best poster and best presentation prizes

Closing remarks

17:30 The Furlong networking drinks reception and exhibition

19:00 Close of event

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Royal Society of Medicine
1 Wimpole Street
London, W1G 0AE

Day 1 & 2's venue are around the corner from each other.

Travelling by tube

- Oxford Circus station (Victoria, Bakerloo, Central lines) & 4 minute walk
- Bond street (Central, Jubilee lines) & 5 minutes walk
- Great Portland Street (Hammersmith & City, Circle lines) & 15 minutes walk

Travelling by train

- **London Victoria Station** (Gatwick Express) & 2 stops on the Victoria line to Oxford Circus or 10 minutes by taxi
- **London Charing Cross station** & 2 stops on the Bakerloo line to Oxford Circus or 10 minutes by taxi
- **London Euston Station** & 2 stops on the Victoria line to Oxford Circus or 10 minutes by taxi
- **London King's Cross & St Pancras Station** (Eurostar) & 3 stops on the Victoria line to Oxford Circus

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