

SAMER ALABED

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SUMMARY

I actively drive the advancement of machine learning applications in cardiac imaging, focusing on automating diagnosis, prognosis, anatomical segmentation, and report generation. My work has been published in prestigious journals, has influenced European guidelines and earned awards from the UK Parliament, Radiological Society of North America and Royal College of Radiologist.

Leveraging my expertise in big data management and analysis, computer coding, and evidence-based medicine, and through collaborating with international centers, I was instrumental in the development of a cardiac MR segmentation tool. This tool is integral to clinical practice at Sheffield Teaching Hospitals and underscores my commitment to bridging the gap between research and clinical application.

In tandem with my research, my clinical interest centres on cardiac imaging, particularly the assessment of ischaemic heart disease with stress perfusion cardiac MR and coronary CT. I completed an advanced cardiac imaging fellowship at the Royal Papworth Hospital and attained high-level cardiac MR and CT accreditation.

Teaching is fundamental in my career, demonstrated through my involvement in organising national conferences and courses and teaching at various levels including international courses, supervising PhD students, mentoring junior radiology trainees, and contributing to the departmental radiology teaching programme. I am honoured to have received an Educational Award from Health Education England and hold a Postgraduate-Certificate in Medical Education along with a Fellowship of the Higher Education Academy.

Leadership is central to my professional identity. I have served as the co-chair of the BSCI trainee committee, previously co-chairing the BSCMR trainee committee, actively contributing to the academic committee of the RCR and have represented doctors and postgraduate students in various committees. I have successfully coordinated the on-call registrars' rota at the Sheffield Radiology Training Scheme since 2018. Despite the challenges of transitioning to the new junior doctors' contract and staff shortages during the COVID-19 pandemic, I consistently ensured smooth operations.

PROFESSIONAL MEMBERSHIPS

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| GMC | General Medical Council |
| RCR | Royal College of Radiologists |
| ESR | European Society of Radiology |
| ESC | European Society of Cardiology |
| ERS | European Respiratory Society |
| BSCMR | British Society of Cardiovascular Magnetic Resonance |
| BSCI | British Society of Cardiovascular Imaging |
| RSNA | Radiological Society of North America |
| SCMR | Society for Cardiovascular Magnetic Resonance |
| ESCR | European Society of Cardiovascular Radiology |
| EACVI | European Association of Cardiovascular Imaging |

QUALIFICATIONS

| | | |
|------|--|-------------------------------|
| 2023 | PhD - AI in cardiac MRI | University of Sheffield |
| | <ul style="list-style-type: none"> Thesis: AI in cardiac MRI to predict prognosis and treatment response Supervisors: Dr Andy Swift and Professor Haiping Lu | |
| 2021 | FHEA - Fellow of the Higher Education Academy | Higher Education Academy |
| 2020 | PgCert - Medical Education | University of Dundee |
| 2019 | MSc - Clinical Research Methods (Distinction) | University of Sheffield |
| 2018 | FRCR - Fellow of the Royal College of Radiologists | Royal College of Radiologists |
| 2013 | MSc - Evidence Based Health-Care | University of Oxford |
| 2011 | MD - Medical Degree | Damascus University |

RESEARCH EXPERIENCE

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|---------|---|-------------------------|
| 2022- | NIHR Clinical Lecturer in Radiology | University of Sheffield |
| | <ul style="list-style-type: none"> Implementing AI applications in clinical practice | |
| 2019-22 | Wellcome Trust Research Fellow in Cardiac MRI | University of Sheffield |
| | <ul style="list-style-type: none"> Data scientist of the ASPIRE cardiac MRI and CT database Helped train, validate and audit deep learning cardiac MRI segmentation Applied machine learning in cardiac MRI to predict diagnosis and prognosis | |
| 2014-19 | NIHR Academic Clinical Fellow in Radiology | University of Sheffield |
| | <ul style="list-style-type: none"> Performing and evaluating diagnostic accuracy studies in radiology | |
| 2010- | Cochrane Systematic Reviewer | Cochrane Heart |

CLINICAL EXPERIENCE

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| 2023-24 | Advanced Cardiothoracic Imaging Fellowship | Royal Papworth Hospital |
| | <ul style="list-style-type: none"> Clinical Supervisor: Dr Bobby Agrawal Research Mentor: Dr Jonathan Weir-Mccall | |
| 2022-23 | Cardiothoracic Radiology Training | Sheffield Teaching Hospitals |
| | <ul style="list-style-type: none"> Cardiac MRI level 3 accreditation - SCMR Cardiac CT level 2 accreditation - BSCI 3 months Cardiac CT experience - Leeds University Hospitals | |
| 2019-22 | Out-of-Programme for Research (OOPR) | Sheffield Teaching Hospitals |
| | <ul style="list-style-type: none"> Acute and trauma CT and diagnostic and interventional ultrasound | |
| 2014-19 | Core Radiology Training | Sheffield Teaching Hospitals |
| | <ul style="list-style-type: none"> ST4 Acute and general CT, Oncology imaging, US intervention ST3 Chest, Uro & Gynae, Paediatric and Vascular radiology ST2 Neuroradiology, GI, MSK, Breast and Nuclear imaging ST1 Plain radiography, US, CT, Fluoroscopy | |
| 2013-14 | Clinical Foundation Training | Buckinghamshire Healthcare Trust |
| | <ul style="list-style-type: none"> Cardiology including coronary care unit, heart failure and valve clinics | |

GRANTS & AWARDS

Research funding

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| £140,000 | Primary-Investigator: 2024 | NIHR |
| | » NIHR Pre-Application Fund: AI-enhanced medical imaging reporting | |
| £15,000 | Primary-Investigator: 2024 | NHS England |
| | » Topol Digital Fellowship: AI-enhanced medical imaging reporting | |
| £469,272 | Co-Investigator: 2023 - 2024 | British Heart Foundation |
| | » PROMETHEUS: Pulmonary hypertension induced Right heart failure | |
| £49,998 | Co-Investigator: 2023 | NIHR i4i |
| | » AI-Assisted Diagnosis of Pulmonary Hypertension using CT and MRI Scans | |
| £199,946 | Co-Investigator: 2021 - 2023 | Janssen Pharmaceuticals |
| | » Building a database of imaging in suspected pulmonary hypertension | |
| £114,354 | Co-Investigator: 2021 - 2022 | Janssen Pharmaceuticals |
| | » Automatic Echo assessment to improve pulmonary hypertension diagnosis | |
| £10,000 | Co-Investigator: 2021 | NIHR Cochrane Incentive Award |
| | » NOAC for myocardial infarction - a network meta-analysis | |
| £7,500 | Co-Investigator: 2019 | NIHR Cochrane Incentive Award |
| | » NOAC for atrial fibrillation - a network meta-analysis | |
| £3,000 | Principal Investigator | Health Education England |
| | » Education, Research and Innovation Grant - 2018 | |
| £3,000 | Principal Investigator | RCR |
| | » Constance Thornton Grant for Radiology Research - 2017 | |
| £23,500 | Scholarship: 2011 | The Saïd Foundation |
| | » MSc at the University of Oxford | |

Awards

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|-------------|---|------------------------------|
| ~£1500 | AI-NET Fellowship - Excellence in AI Research - 2023 | DAAD |
| Winner | NHS Parliamentary Awards - National Awards - 2023 | NHS England |
| Winner | The Future of NHS Award - North East & Yorkshire - 2023 | NHS England |
| Finalist | Digital Innovator of the Year - 2023 | HSJ Awards |
| Distinction | Radiology Editor's Recognition Award - 2023 | Radiology: RCTI |
| £5000 | NHS Innovation Award - 2022 | Medipex |
| 1st prize | Oral Abstract Winner at RCR Global - 2022 | RCR |
| £500 | British Thoracic Society Conference Award - 2022 | BTS |
| £250 | European Congress of Radiology Travel Award - 2022 | RCR |
| 1st prize | School of Radiology - Yorkshire & Humber - 2022 | Health Education England |
| \$1000 | RSNA Trainee Research Prize - 2021 | RSNA |
| £500 | The Sir Ernest Finch Travelling Fellowship - 2021 | Sheffield Teaching Hospitals |
| 1st prize | Professor Ronald Grainger Prize - 2021, 2020 & 2018 | Sheffield Teaching Hospitals |
| 1st prize | George and Vera Ansell Radiology Prize - 2018 | RCR |

IMPACT AND RECOGNITION

Citations in Guidelines

| | | |
|------|--|-----------|
| 2022 | Diagnosis and treatment of pulmonary hypertension | ESC & ERS |
| 2019 | Management of patients with supraventricular tachycardia | ESC |
| 2015 | Diagnosis and management of pericardial diseases | ESC |

Media Coverage

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| July 2023 | MP visits finalists for transformative AI heart disease technology. | The Star |
| June 2023 | Sheffield Hospitals heart diagnosis AI technology announced as regional winner of Future NHS Award. | The Star |
| May 2023 | NHS doctors want ChatGPT AI to write patient heart reports so they can see more people. | The Daily Mail |
| March 2023 | Artificial intelligence can save NHS time and money with heart scans. | The Mirror |
| Dec 2022 | NHS heart patients to receive quicker diagnosis due to Sheffield University and Teaching Hospitals innovation. | The Star |
| Dec 2022 | AI spots damage on heart scans in seconds. | The Daily Mail |
| Dec 2021 | AI-based measurements increase utility of cardiac MRI. | AuntMinnie |

SERVICE TO RESEARCH COMMUNITY

Journal Editor Roles

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| Deputy | Radiology: Cardiothoracic Imaging |
| Contact | Cochrane Heart |

Peer Review

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| 8 reviews | Radiology: Cardiothoracic Imaging |
| 8 reviews | European Heart Journal - Cardiovascular Imaging |
| 7 reviews | Clinical Radiology |
| 2 reviews | JACC: Cardiovascular Imaging |
| 2 reviews | Insights Into Imaging |
| 1 review | Magnetic Resonance Imaging |
| 1 review | Clinical Pediatrics |
| 3 reviews | RCR Seed Grant |
| 2 reviews | RCR Kodak Fellowship |
| 1 review | RCR Roentgen Professorship |

Invited Panel Chair

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| 2023 | BSCMR Annual Conference |
| 2023 | BSCI Annual Conference |

LEADERSHIP AND MANAGEMENT

National Leadership Role

- » Co-Chair Trainee Committee - British Society of Cardiovascular Imaging
- » Co-Chair Trainee Committee - British Society of Cardiac Magnetic Resonance
- » AI working group - RCR Clinical Academic Committee
- » Expert Panel for Radiology Research - RCR RADIANT

Local Committee Membership

- » Research Excellence Framework (REF) 2024 Committee for Clinical Medicine
- » Co-Lead Imaging and omics AI interest group - University of Sheffield
- » Radiology Training committee - Sheffield Teaching Hospitals

Rota Management

- » Radiology on-call coordinator working closely with HR since 2018
- » Developed code to calculate fair on-call shifts for the radiology department
- » Performed a cost-effectiveness analysis for multiple on-call rota scenarios
- » Improved on-call cover by introducing Twilight shifts for junior trainees
- » Responded to Covid-19 pressure with a double cover system described as a "stroke of genius" by the Clinical Director

Student and Trainee Representation

- » Representative of less than full-time radiology trainees
- » Student councillor - University of Sheffield (2014/15)
- » Student representative - University of Oxford (2012/13)

Management Courses

- » Intensive Course on Leadership - University of Sheffield
- » Decision Making - University of Oxford
- » Making Decisions Based on Data - Udacity University
- » Economic Evaluation & Healthcare Financing - University of Sheffield

TEACHING

National Teaching Organisation

- › Programme Chair of the BSCI/BSCCT 2024 annual conference at Sheffield
- › Organiser of the BSCMR 2023 Webinar series
- › Organiser of the BSCI/BSCCT Cardiac CT workshop at BCS 2022

Post-Graduate Teaching Experience

- › PhD co-supervisor at University of Sheffield: Turki Nasser and Khalid Ghamdi
- › Lecturer MRes Cardiovascular Medicine - "How to write Systematic Reviews"
- › Mentor to junior radiology registrars and research trainees
- › Tutor - International Critical Appraisal Skills Programme, University of Oxford
- › Regular one-to-one and small group departmental radiology teaching
- › Educational Advisor - RadiGo radiology teaching website

Undergraduate Teaching Experience

- › Anatomy Demonstrator, Medical School, University of Sheffield
- › Co-Supervisor - Medical School Student Selected components
- › Supervisor - Summer Programme for International Research Internship
- › Lecturer - SAMS virtual EBM courses with > 20,000 views on YouTube

Teaching Courses

- › FHEA - Fellow of the Higher Education Academy
- › PGCert in Medical Education for Radiology - University of Dundee
- › Gateway Course in Medical Education - University of Sheffield
- › Teaching and Learning skills - University of Oxford
- › Training the Trainer course - University of Oxford

Highlighted Publications

- [1] Al Said S, Kaier K, Sumaya W, Alsaid D, Duerschmied D, Storey R, Gibson C, Westermann D, and **Alabed S**. *Non-vitamin-K-antagonist oral anticoagulants (NOACs) after acute myocardial infarction: a network meta-analysis*. Cochrane Database of Systematic Reviews, 2024.
- [2] **Alabed S**, Garg P, Alandejani F, Dwivedi K, Maiter A, Karunasaagarar K, Rajaram S, Hill C, Thomas S, Gossling R, et al. *Establishing minimally important differences for cardiac MRI endpoints in pulmonary arterial hypertension*. European Respiratory Journal, 2023.
- [3] Zhong L, **Alabed S**, Leng S, Chai P, Teo L, Ruan W, Low TT, Wild JM, Allen JC, Lim ST, et al. *Pulmonary Artery Strain Predicts Prognosis in Pulmonary Arterial Hypertension*. JACC: Cardiovascular Imaging, 2023.
- [4] **Alabed S**, Alandejani F, Dwivedi K, Karunasaagarar K, Sharkey M, Garg P, Koning PJH de, Tóth A, Shahin Y, Johns C, et al. *Validation of Artificial Intelligence Cardiac MRI Measurements: Relationship to Heart Catheterization and Mortality Prediction*. Radiology, 2022.
- [5] **Alabed S**, Uthoff J, Zhou S, Garg P, Dwivedi K, Alandejani F, Gosling R, Schobs L, Brook M, Capener D, et al. *Machine Learning cardiac-MRI features predict mortality in newly diagnosed pulmonary arterial hypertension*. European Heart Journal - Digital Health, 2022.
- [6] **Alabed S**, Maiter A, Salehi M, Wild J, Lu H, O'regan D, Van Der Geest R, Garg P, and Swift A. *Quality of reporting in AI cardiac MRI segmentation studies - a systematic review and recommendations for future studies*. Vol. 9. Frontiers in Cardiovascular Medicine, 2022.
- [7] Alandejani F, **Alabed S**, Garg P, Goh ZM, Karunasaagarar K, Sharkey M, Salehi M, Aldabbagh Z, Dwivedi K, Mamalakis M, et al. *Training and clinical testing of artificial intelligence derived right atrial cardiovascular magnetic resonance measurements*. Vol. 24. Journal of Cardiovascular Magnetic Resonance, 2022, p. 25.
- [8] Garg P, Gosling R, Swoboda P, Jones R, Rothman A, Wild JM, Kiely DG, Condliffe R, **Alabed S**, and Swift AJ. *Cardiac magnetic resonance identifies raised left ventricular filling pressure: prognostic implications*. European Heart Journal, May 2022.
- [9] Goh ZM, Balasubramanian N, **Alabed S**, Dwivedi K, Shahin Y, Rothman AMK, Garg P, Lawrie A, Capener D, Thompson AAR, et al. *Right ventricular remodelling in pulmonary arterial hypertension predicts treatment response*. Heart, 2022.
- [10] Shahin Y, **Alabed S**, Lewis RA, Johns C, Garg P, Wild JM, Condliffe R, Swift AJ, Kiely DG, and al. et. *CMR Measures of Left Atrial Volume Index and Right Ventricular Function Have Prognostic Value in Chronic Thromboembolic Pulmonary Hypertension*. Vol. 9. Frontiers in Medicine, 2022.
- [11] **Alabed S**, Shahin Y, Alandejani F, Johns C, Lewis R, Condliffe R, Wild J, Kiely D, and Swift A. *Cardiac-MRI Predicts Clinical Worsening and Mortality in Pulmonary Arterial Hypertension: A Systematic Review and Meta-Analysis*. JACC Cardiovascular Imaging, 2021.
- [12] **Alabed S**, Saunders L, Garg P, Shahin Y, Rolf A, Puntmann V, Nagel E, Wild J, Kiely D, and Swift A. *Myocardial T1-mapping and extracellular volume in pulmonary arterial hypertension: A systematic review and meta-analysis*. Vol. 79. Magnetic Resonance Imaging, 2021, pp. 66–75.
- [13] **Alabed S**, Garg P, Johns CS, Alandejani F, Shahin Y, Dwivedi K, Wild J, Kiely D, and Swift A. *Cardiac Magnetic Resonance in Pulmonary Hypertension-an Update*. Vol. 13. Current Cardiovascular Imaging Reports, 2020.
- [14] Goh Z, **Alabed S**, Rothman A, Garg P, Lawrie A, Thompson R, Condliffe R, Wild J, Kiely D, Swift A, and al. et. *Right Ventricular Adaptation Assessed Using Cardiac Magnetic Resonance Predicts Survival in Pulmonary Arterial Hypertension*. JACC: Cardiovascular Imaging, 2020.
- [15] Al Said S, **Alabed S**, Kaier K, Tan A, Bode C, Meerpohl J, and Duerschmied D. *Non-vitamin K antagonist oral anticoagulants post-percutaneous coronary intervention: a network meta-analysis*. Vol. 12. Cochrane, 2019.
- [16] **Alabed S**, Providência R, and Chico TJA. *Cochrane corner: adenosine versus intravenous calcium channel antagonists for supraventricular tachycardia*. Vol. 104. Heart, 2018, pp. 1993–1994.

Peer Reviewed Publications

- [17] Fu Q, **Alabed** S, Hoole SP, Abraham G, and Weir-McCall JR. "Prognostic Value of Stress Perfusion Cardiac MRI in Cardiovascular Disease: A Systematic Review and Meta-Analysis of the Effects of the Scanner, Stress Agent, and Analysis Technique". In: *Radiology: Cardiothoracic Imaging* 6.3 (2024).
- [18] Aquino GJ, Mastrodicasa D, **Alabed** S, Abohashem S, Wen L, Gill RR, Bardo DME, Abbata S, and Hanneman K. "Radiology: Cardiothoracic Imaging Highlights 2023". In: *Radiology: Cardiothoracic Imaging* 6.2 (2024).
- [19] Ross J, Hammouche S, Chen Y, Rockall A, **Alabed** S, Chen M, Dwivedi K, Fascia D, Greenhalgh R, Hall M, et al. "Beyond regulatory compliance: evaluating radiology artificial intelligence applications in deployment". In: *Clinical Radiology* (2024).
- [20] Abdulaal L, Maiter A, Salehi M, Sharkey M, Alnasser T, Garg P, Rajaram S, Hill C, Johns C, Rothman AMK, et al. "A systematic review of artificial intelligence tools for chronic pulmonary embolism on CT pulmonary angiography". In: *Frontiers in Radiology* 4 (2024).
- [21] Durrington C, Hurdman JA, Elliot CA, Maclean R, Veen JV, Saccullo G, De-Foneska D, Swift AJ, Rajaram S, Hill C, et al. "Systematic pulmonary embolism follow-up increases diagnostic rates of chronic thromboembolic pulmonary hypertension and identifies less severe disease: results from the ASPIRE Registry". In: *European Respiratory Journal* (2024).
- [22] Dwivedi K, Sharkey M, Delaney L, **Alabed** S, Rajaram S, Hill C, Johns C, Rothman A, Mamalakis M, Thompson AAR, et al. "Improving Prognostication in Pulmonary Hypertension Using AI-quantified Fibrosis and Radiologic Severity Scoring at Baseline CT". In: *Radiology* 310.2 (2024).
- [23] Alnasser TN, Abdulaal L, Maiter A, Sharkey M, Dwivedi K, Salehi M, Garg P, Swift AJ, and **Alabed** S. "Advancements in Cardiac Structures Segmentation: A Comprehensive Systematic Review of Deep Learning in CT Imaging". In: *Frontiers in Cardiovascular Medicine* 11 (2024).
- [24] Salehi M, Maiter A, Strickland S, Karunasaagar K, Dwivedi K, Sharkey M, Metherall P, Geest R van der, **Alabed** S, and Swift AJ. "Clinical assessment of an AI tool for measuring biventricular parameters on cardiac MR". In: *Frontiers in Cardiovascular Medicine* 11 (2024).
- [25] Garg P, Grafton-Clarke C, Matthews G, Swoboda P, Zhong L, Aung N, Thomson R, **Alabed** S, Demirkiran A, Vassiliou VS, and Swift AJ. "Sex-specific cardiac magnetic resonance pulmonary capillary wedge pressure". In: *European Heart Journal Open* 4.3 (May 2024).
- [26] Mehmood Z, Assadi H, Grafton-Clarke C, Li R, Matthews G, **Alabed** S, Girling R, Underwood V, Kasmai B, Zhao X, et al. "Validation of 2D flow MRI for helical and vortical flows". In: *Open Heart* 11.1 (2024).
- [27] Wang X, Gondal M, **Alabed** S, Hill C, and Barmby D. "Left Main Stem Compression by Intrapericardial Paraganglioma Associated With Succinate Dehydrogenase Mutation". In: *JACC: Case Reports* 29 (2024).
- [28] Weir-McCall J and **Alabed** S. "Myocardial Tissue Characterization With CT-Derived Extracellular Volume". In: *JACC: Cardiovascular Imaging* (2023).
- [29] Dwivedi K, Sharkey M, **Alabed** S, Langlotz CP, Swift AJ, and Bluethgen C. "External validation, radiological evaluation, and development of deep learning automatic lung segmentation in contrast-enhanced chest CT". In: *European Radiology* (2023).
- [30] Mastrodicasa D, Gunasekaran S, **Alabed** S, Gulsin GS, and Hanneman K. "Top 2023 Images in Cardiothoracic Imaging". In: *Radiology: Cardiothoracic Imaging* 5 (2023).
- [31] Maiter A, Hocking K, Matthews S, Taylor J, Sharkey M, Metherall P, **Alabed** S, Dwivedi K, Shahin Y, Anderson E, et al. "Evaluating the performance of artificial intelligence software for lung nodule detection on chest radiographs in a retrospective real-world UK population". In: *BMJ Open* 13 (2023).
- [32] Assadi H, Matthews G, Zhao X, Li R, **Alabed** S, Grafton-Clarke C, Mehmood Z, Kasmai B, Limbachia V, Gosling R, et al. "Cardiac MR modelling of systolic and diastolic blood pressure". In: *Open Heart* 10 (2023).
- [33] Khassafi F, Chelladurai P, Valasarajan C, Nayakanti SR, Martineau S, Kiely DG, Swift AJ, **Alabed** S, Omura J, Breuils-Bonnet S, et al. "Transcriptional profiling unveils molecular subgroups of adaptive and maladaptive right ventricular remodeling in pulmonary hypertension". In: *Nature Cardiovascular Research* 2 (2023).
- [34] Grafton-Clarke C, Matthews G, Gosling R, Swoboda P, Rothman A, Wild JM, Kiely DG, Condliffe R, **Alabed** S, Swift AJ, and Garg P. "The Left Atrial Area Derived Cardiovascular Magnetic Resonance Left Ventricular Filling Pressure Equation Shows Superiority over Integrated Echocardiography". In: *Medicina* 59 (2023).

- [35] Grafton-Clarke C, Garg P, Swift AJ, **Alabed S**, Thomson R, Aung N, Chambers B, Klassen J, Levelt E, Farley J, et al. "Cardiac magnetic resonance left ventricular filling pressure is linked to symptoms, signs and prognosis in heart failure". In: *ESC Heart Failure* 10 (2023), pp. 3067–3076.
- [36] **Alabed S**. "Artificial Intelligence in Cardiac Magnetic Resonance Imaging to Predict Prognosis and Treatment Response". In: *White-Rose E-Thesis* (2023).
- [37] Maiter A, Salehi M, Swift A, and **Alabed S**. "How should studies using AI be reported? Lessons from a systematic review in cardiac MRI". In: *Frontiers in Radiology* 3 (2023).
- [38] Alkhanfar D, Dwivedi K, Alandejani F, Shahin Y, **Alabed S**, Johns C, Garg P, Thompson AAR, Rothman AMK, Hameed A, et al. "Non-invasive detection of severe PH in lung disease using magnetic resonance imaging". In: *Frontiers in Cardiovascular Medicine* 10 (2023).
- [39] Garg P, Javed W, Assadi H, **Alabed S**, Grafton-Clarke C, Swift AJ, Williams G, Al-Mohammad A, Sawh C, Vassiliou VS, et al. "An acute increase in Left Atrial volume and left ventricular filling pressure during Adenosine administered myocardial hyperaemia: CMR First-Pass Perfusion Study". In: *BMC Cardiovascular Disorders* 23 (2023), p. 246.
- [40] Macdonald A, Salehi M, **Alabed S**, Maiter A, Goh ZM, Dwivedi K, Johns C, Coglianò M, Alandejani F, Condliffe R, et al. "Semi-automatic thresholding of RV trabeculation improves repeatability and diagnostic value in suspected pulmonary hypertension". In: *Frontiers in Cardiovascular Medicine* 9 (2023).
- [41] Hameed A, Condliffe R, Swift AJ, **Alabed S**, Kiely DG, and Charalampopoulos A. "Assessment of Right Ventricular Function—a State of the Art". In: *Current Heart Failure Reports* 20 (2023), pp. 194–207.
- [42] Grafton-Clarke C, Garg P, Swift AJ, **Alabed S**, Thomson R, Aung N, Chambers B, Klassen J, Levelt E, Farley J, et al. "Cardiac magnetic resonance left ventricular filling pressure is linked to symptoms, signs and prognosis in heart failure". In: *ESC Heart Failure* ().
- [43] Gosling RC, Williams G, Al Baraikhan A, **Alabed S**, Levelt E, Chowdhary A, Swoboda PP, Halliday I, Hose DR, Gunn JP, et al. "Quantifying Myocardial Blood Flow and Resistance Using 4D-Flow Cardiac Magnetic Resonance Imaging". In: *Cardiology research and practice* (2023).
- [44] Doolub G, Mamalakis M, **Alabed S**, Van der Geest RJ, Swift AJ, Rodrigues JCL, Garg P, Joshi NV, and Dastidar A. "Artificial Intelligence as a Diagnostic Tool in Non-Invasive Imaging in the Assessment of Coronary Artery Disease". In: *Medical Sciences* 11 (2023).
- [45] Assadi H, Li R, Grafton-Clarke C, Uthayachandran B, **Alabed S**, Maiter A, Archer G, Swoboda PP, Sawh C, Ryding A, et al. "Automated 4D flow cardiac MRI pipeline to derive peak mitral inflow diastolic velocities using short-axis cine stack: two centre validation study against echocardiographic pulse-wave doppler". In: *BMC Cardiovascular Disorders* 23 (2023), p. 24.
- [46] Li R, Assadi H, Matthews G, Vassiliou VS, Nelthorpe F, Ashman D, Curtin J, Van der Geest RJ, **Alabed S**, Swift AJ, et al. "The Importance of Mitral Valve Prolapse Doming Volume in the Assessment of Left Ventricular Stroke Volume with Cardiac MRI". In: *Medical Sciences* 11 (2023), p. 13.
- [47] Mamalakis M, Dwivedi K, Sharkey M, **Alabed S**, Kiely D, and Swift AJ. "A transparent artificial intelligence framework to assess lung disease in pulmonary hypertension". In: *Scientific Reports* 13 (2023), p. 3812.
- [48] Sharkey MJ, Taylor JC, **Alabed S**, Dwivedi K, Karunasaagarar K, Johns CS, Rajaram S, Garg P, Alkhanfar D, Metherall P, et al. "Fully automatic cardiac four chamber and great vessel segmentation on CT pulmonary angiography using deep learning". In: *Frontiers in Cardiovascular Medicine* 9 (2022).
- [49] Alandejani F, Hameed A, Tubman E, **Alabed S**, Shahin Y, Lewis RA, Dwivedi K, Mahmood A, Middleton J, Watson L, et al. "Imaging and Risk Stratification in Pulmonary Arterial Hypertension: Time to Include Right Ventricular Assessment". In: *Frontiers in Cardiovascular Medicine* 9 (2022).
- [50] Shahin Y, **Alabed S**, Alkhanfar D, Tschirren J, Rothman AMK, Condliffe R, Wild JM, Kiely DG, and Swift AJ. "Quantitative CT Evaluation of Small Pulmonary Vessels Has Functional and Prognostic Value in Pulmonary Hypertension". In: *Radiology* (2022).
- [51] Assadi H, **Alabed S**, Maiter A, Salehi M, Li R, Ripley DP, Van der Geest RJ, Zhong Y, Zhong L, Swift AJ, and Garg P. "The Role of Artificial Intelligence in Predicting Outcomes by Cardiovascular Magnetic Resonance: A Comprehensive Systematic Review". In: *Medicina* 58 (2022).
- [52] Alkhanfar D, Shahin Y, Alandejani F, Dwivedi K, **Alabed S**, Johns C, Lawrie A, Thompson AR, Rothman AM, Tschirren J, et al. "Severe pulmonary hypertension associated with lung disease is characterised by a loss of small pulmonary vessels on quantitative computed tomography". In: *European Respiratory Journal Open Research* 8 (2022).

- [53] Njoku P, Grafton-Clarke C, Assadi H, Gosling R, Archer G, Swift AJ, Morris P, **Alabed S**, Flather M, Cameron D, et al. "Validation of time-resolved, automated peak trans-mitral velocity tracking: Two center four-dimensional flow cardiovascular magnetic resonance study". In: *International Journal of Cardiology* (2022).
- [54] Dwivedi K, Condliffe R, Sharkey M, Lewis R, **Alabed S**, Rajaram S, Hill C, Saunders L, Metherall P, Lu H, et al. "Computed tomography lung parenchymal descriptions in routine radiological reporting have diagnostic and prognostic utility in patients with idiopathic pulmonary arterial hypertension and pulmonary hypertension associated with lung disease". In: *European Respiratory Journal Open Research* (2022).
- [55] Al Said S, Garg P, Jenkins S, Ahmad M, Qintar M, Kyriacou A, Verma N, Providencia R, Camm J, and **Alabed S**. "Catheter ablation for atrial fibrillation (Protocol)". In: *Cochrane Database of Systematic Reviews* 1 (2022).
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Conference Publications

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ORAL PRESENTATIONS

| | | |
|------|--|--------------|
| 2024 | Post-Treatment MRI Changes in Pulmonary Hypertension | London |
| | » CMR 2024 - International Cardiac Magnetic Resonance Conference | |
| 2023 | Large Language Model Mortality Prediction in CT Reports | Berlin |
| | » European Society of Cardiac Radiology | |
| 2023 | From automated cardiac measurements to auto reporting | London |
| | » Dragon's Den - Royal College of Radiologists | |
| 2022 | Quality of Reporting of Artificial Intelligence studies | Dubai, UAE |
| | » Royal College of Radiologists Global Conference | |
| 2022 | Cardiac Findings on General CT | Dubai, UAE |
| | » Royal College of Radiologists Global Conference | |
| 2021 | AI Cardiac MRI Measurements Clinical Benchmarking | Chicago, USA |
| | » Radiological Society of North America | |
| 2021 | Using AI to improve pulmonary hypertension assessment | London |
| | » National Pulmonary Hypertension Research Forum | |
| 2021 | The future of cardiac imaging | Sheffield |
| | » Yorkshire & Humber Chest and Cardiac Regional Study Day | |
| 2021 | Clinical Validation of Cardiac MRI AI Segmentation | Sheffield |
| | » School of Radiology - Yorkshire & Humber annual meeting | |
| | » Professor Ronald Grainger Memorial Meeting | |
| | » Clinical Imaging Clinical Research (CICR) meeting | |
| | » Department Research in Progress Meeting (DRIP) | |
| | » Sheffield Medical School Research Conference | |
| 2021 | Natural Language Processing in Radiology Audit | Leeds |
| | » Yorkshire School of Radiology Annual Conference | |
| 2017 | Cost per MRI diagnosis in developmental impairment | Liverpool |
| | » Royal College of Radiologists Annual Conference | |
| 2015 | CTPA detection rates in spinal cord injury | Bangor |
| | » Society of Radiologists in Training Annual Conference | |
| 2012 | The need for Evidence-Based Medicine in Syria | London |
| | » Saïd Foundation Annual Dinner | |
| | » Attended by UK Ministers, MPs, Lords and Ambassadors at The V&A Museum | |

INTERNATIONAL POSTER PRESENTATIONS

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|-----------|--|-----------|
| ESCR 23 | Radiology reports of cardiac MRI scans predict prognosis | Berlin |
| ESCR 22 | Outcome prediction with CMR in pulmonary hypertension | Rome |
| ERS 22 | Correlation of emPHasis-10 with clinical tests | Barcelona |
| EACVI 22 | Quality of reporting in AI cardiac MRI segmentation studies | London |
| ECR 22 | Reporting cardiac findings on body CT over the last decade | Vienna |
| SCMR 22 | Time-resolved cardiac MRI prognostic feature extraction | Virtual |
| ERS 21 | Automated CMR assessment in pulmonary hypertension | Virtual |
| EuroCMR21 | High repeatability of deep learnt CMR measurements | Virtual |
| EuroCMR21 | Automated CMR correlates with right heart catheter | Virtual |
| ECR 21 | Deep Learning derived T1-mapping values | Virtual |
| ECR 21 | Natural language processing to audit CT Head reports | Virtual |
| SCMR 21 | Machine Learning in Cardiac MRI Predicts Mortality | Virtual |
| RSNA 20 | Meta-analysis of T ₁ -mapping in pulmonary hypertension | Virtual |
| ERS 20 | Cardiac MRI predicts prognosis in pulmonary hypertension | Virtual |
| ESC 17 | Beta-blockers in children with congestive heart failure | Paris |

STATISTICAL & CODING SKILLS

Software skills

- » **Python** fluent command of data management, analysis and visualisation
- » **R Language** used extensively for most common statistical tests
- » **SPSS** used extensively for most common statistical tests
- » **STATA** used extensively for diagnostic accuracy meta-analyses
- » **LaTeX** used the LaTeX typesetting system to write my PhD thesis

Statistics Courses

- » Statistics for Health Care Research - University of Oxford
- » Advanced Statistics for Health Researchers - University of Sheffield
- » Descriptive and exploratory data analysis - University of Hagen
- » Diagnostic accuracy meta-analysis - University of Birmingham
- » Python Data Analysis course - University of Sheffield
- » Data Analysis Skills for Researchers - University of Sheffield

LANGUAGES

| | |
|--------|---------|
| Fluent | English |
| Fluent | German |
| Fluent | Arabic |