

# DR SAMER ALABED

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## SUMMARY

I actively drive the advancement of machine learning applications and report generation in cardiac imaging. I have published my work in prestigious journals, influenced European guidelines, and earned awards from the UK Parliament, the Radiological Society of North America, and the Royal College of Radiologists.

I led the development of a cardiac MR segmentation tool, integrating my expertise in big data, coding, and evidence-based medicine. Already used in over 5,000 MRI scans at Sheffield Teaching Hospitals, it saves thousands by reducing manual segmentation costs and eliminating the need for commercial solutions, demonstrating my commitment of bridging research with clinical practice.

In tandem with my research, my clinical focus is on cardiac imaging, particularly the assessment of ischaemic heart disease with stress perfusion cardiac MR and coronary CT angiography. I completed an advanced cardiac imaging fellowship at the Royal Papworth Hospital and hold high-level accreditations in both cardiac MR and CT.

Teaching is integral in my career. I have organised national conferences and courses, such as the BSCI annual meeting, BCS cardiac CT course, and BSCMR webinar series. I teach at various levels, including international courses, supervising PhD students, mentoring juniors, and contributing to the departmental radiology teaching program. The positive feedback from the BSCMR webinar series prompted its continuation, highlighting its impact on learners. I received an Educational Award from Health Education England, earned a Postgraduate-Certificate in Medical Education and became a Fellow of the Higher Education Academy.

Leadership is central to my professional identity. I represented doctors and postgraduate students, and served as the co-chair of the BSCI and BSCMR trainee committees and Trainee Editorial Board of *Radiology: Cardiothoracic Imaging*, actively driving the education of cardiac imagers. On the RCR academic committee and AI working group, I helped develop RCR guidelines for evaluating AI deployment in radiology. Over six years, I managed the on-call registrars' rota at the Sheffield Radiology Training Scheme, ensuring smooth operations during the transition to the new junior doctors' contract and the COVID-19 pandemic.

## PROFESSIONAL MEMBERSHIPS

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

2024	<b>CCT</b> - Certificate of Completion of Training in Radiology	General Medical Council
2023	<b>PhD</b> - AI in cardiac MRI	University of Sheffield
	<ul style="list-style-type: none"> <li>Thesis: AI in cardiac MRI to predict prognosis and treatment response</li> <li>Supervisors: Professor Andy Swift and Professor Haiping Lu</li> </ul>	
2021	<b>FHEA</b> - Fellow of the Higher Education Academy	Higher Education Academy
2020	<b>PgCert</b> - Medical Education	University of Dundee
2019	<b>MSc</b> - Clinical Research Methods (Distinction)	University of Sheffield
2018	<b>FRCR</b> - Fellow of the Royal College of Radiologists	Royal College of Radiologists
2013	<b>MSc</b> - Evidence Based Health-Care	University of Oxford
2011	<b>MD</b> - Medical Degree	Damascus University

## RESEARCH EXPERIENCE

2024-	<b>Senior Clinical Research Fellow in Radiology</b>	University of Sheffield
2022-24	<b>NIHR Clinical Lecturer in Radiology</b>	University of Sheffield
2019-22	<b>Wellcome Trust Research Fellow in Cardiac MRI</b>	University of Sheffield
	<ul style="list-style-type: none"> <li>Data scientist of the ASPIRE cardiac MRI and CT database</li> <li>Helped train, validate and audit deep learning cardiac MRI segmentation</li> </ul>	
2014-19	<b>NIHR Academic Clinical Fellow in Radiology</b>	University of Sheffield
	<ul style="list-style-type: none"> <li>Performing and evaluating diagnostic accuracy studies in radiology</li> </ul>	
2010-	<b>Cochrane Systematic Reviewer</b>	Cochrane Heart

## CLINICAL EXPERIENCE

2024-	<b>Consultant Cardiothoracic Radiologist</b>	Sheffield Teaching Hospitals
2023-24	<b>Advanced Cardiothoracic Imaging Fellowship</b>	Royal Papworth Hospital
	<ul style="list-style-type: none"> <li>Supervisors: Dr Bobby Agrawal and Dr Jonathan Weir-Mccall</li> </ul>	
2022-23	<b>Cardiothoracic Radiology Training</b>	Sheffield Teaching Hospitals
	<ul style="list-style-type: none"> <li>Cardiac MRI level 3 accreditation - SCMR</li> <li>Cardiac CT level 2 accreditation - BSCI</li> <li>3 months Cardiac CT experience - Leeds University Hospitals</li> </ul>	
2019-22	<b>Out-of-Programme for Research (OOPR)</b>	Sheffield Teaching Hospitals
	<ul style="list-style-type: none"> <li>Acute and trauma CT and diagnostic and interventional ultrasound</li> </ul>	
2014-19	<b>Core Radiology Training</b>	Sheffield Teaching Hospitals
	<ul style="list-style-type: none"> <li>ST4 Acute and general CT, Oncology imaging, US intervention</li> <li>ST3 Chest, Uro &amp; Gynae, Paediatric and Vascular radiology</li> <li>ST2 Neuroradiology, GI, MSK, Breast and Nuclear imaging</li> <li>ST1 Plain radiography, US, CT, Fluoroscopy</li> </ul>	
2013-14	<b>Clinical Foundation Training</b>	Buckinghamshire Healthcare Trust
	<ul style="list-style-type: none"> <li>Cardiology including coronary care unit, heart failure and valve clinics</li> </ul>	

## GRANTS & AWARDS

### Research funding

£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

£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

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

Deputy	Radiology: Cardiothoracic Imaging
Contact	Cochrane Heart

### Peer Review

10 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
8 reviews	Grant reviews for RCR, Heart Research UK, Polish Science Center

### Invited Panel Chair

2023	BSCMR Annual Conference
2023	BSCI Annual Conference

## LEADERSHIP AND MANAGEMENT

### National Leadership Role

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- » 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

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- » 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

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- » 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

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

### Management Courses

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- » 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

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- › 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

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- › 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

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- › 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

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- › 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, Sharkey M, Salehi M, Wild JM, Watson L, 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, Tan JL, Yip JWL, Swift AJ, Kiely DG, and Tan RS. *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, Mamalakis M, Stott S, Capener D, Wood S, 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, Johns C, Wild JM, Rothman AM, Geest RJ van der, 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, Metherrall P, Uthoff J, Johns C, Rothman A, 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, Alandejani F, Wild JM, Johns CS, Lewis RA, 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, Abbbara 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, Halliday K, Harden S, Ramsden W, and Shelmerdine S. "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, Dwivedi K, Kiely DG, **Alabed** S, and Swift AJ. "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, Thomas S, Dwivedi K, **Alabed** S, Wild JM, 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, Wild J, Condliffe R, Kiely DG, and Swift AJ. "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, Karunasaagarar 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, Ricci F, Zhong L, Aung N, Petersen SE, 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, Holt S, Rowbotham C, Kamil MA, Hoggard N, 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, Yashoda GK, Halliday I, Swoboda P, Ripley DP, 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, Kuenne C, Potus F, Günther S, Savai R, 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, Greenwood JP, Plein S, and Swoboda PP. "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, Charalampopoulos A, Wild JM, Condliffe R, Kiely DG, and Swift AJ. "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, Khanji MY, Ricci F, Greenwood JP, Plein S, and Swoboda P. "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, Wild JM, Kiely DG, Garg P, and Swift AJ. "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, Greenwood JP, Plein S, and Swoboda PP. "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 Baraikani A, **Alabed S**, Levelt E, Chowdhary A, Swoboda PP, Halliday I, Hose DR, Gunn JP, Greenwood JP, Plein S, Swift AJ, Wild JM, 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, Nelthorpe F, Kasmai B, Ricci F, Geest RJ van der, 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, Hughes M, and Garg P. "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, O'Regan DP, Geest RJ van der, Condliffe R, Kiely DG, 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, Alkhanfar D, Johns CS, Rajaram S, Garg P, 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).

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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

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 <sub>1</sub> -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