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Research Interests
Roger is a member of the AI Research Theme. His research interests includes:

Novel computing systems including multi-precision computing, edge computing solutions, Field Programmable Gate Arrays
Big Data analytics particularly focused at manufacturing.
Innovative telecommunications hardware platforms incorporating edge AI technology for advanced security and IoT applications.

Research output
Towards receiver-agnostic and collaborative radio frequency fingerprint identification
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R6468ECS: Approximate Computing for Power and Energy Optimisation
Karakonstantis, G., O'Neill, M. & Woods, R. 25/11/2020 → …
R1701ECI: CASE award: M.S. McKeown - EPSRC/SELEX
Woods, R.
01/08/2005 → …

R1848ELE: Dorothy Hodgkin Postgraduate Award
Woods, R.
01/08/2006 → …

R1318ECI: eFUTURES XD
Woods, R.
01/08/2011 → 27/05/2015

R1057ECI: eFutures2 : exploiting the UK's rich heritage in electronics
Woods, R.
15/04/2019 → …

R1337CSC: ENPOWER
Nikolopoulos, D. & Woods, R.
01/08/2013 → 05/02/2018

R1603ELE: EPSRC Case Ref 0430024 - Hasson
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01/08/2004 → …

R1917CNR: Health Data Research UK (HDR UK)
Lawler, M., Blayney, J., Coleman, H., Dunne, P., Heaney, L., Kee, F., McArt, D., Nikolopoulos, D., O'Reilly, D., Overton, I., Salto-Tellez, M. & Woods, R.
29/10/2018 → …

R1129ECI: Kelvin-2 - The High Performance Computing Centre in Northern Ireland (HPC-NI)
Woods, R., Chevallier, O., Gillan, C., Hu, P., Rafferty, K., Salto-Tellez, M., Tikhonova, I. & Vandierendonck, H.
04/12/2019 → …

R2776LAW: Leverhulme Interdisciplinary Network on Algorithmic Solutions (LINAS)
Morison, J., Bourne, M., Degenhardt, T., MacCarthaigh, M., McCall, C., O'Kelly, C., Padmanabhan, D., Paternostro, M., Schwamb, M., Scott-Hayward, S., Smartt, S., Vandierendonck, H. & Woods, R.
17/03/2021 → …

R8410CSC: NanoStreams: A Hardware and Software Stack for Real-Time Analytics on Fast Data Streams
Nikolopoulos, D., Spence, I. & Woods, R.
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R6551CSC: Open TransPREcision COMPUTing
Woods, R., Karakonstantis, G. & Vandierendonck, H.
03/11/2016 → …

R1138ECI: Programmable embedded platforms for remote and compute intensive image processing applications
Woods, R.
01/08/2012 → 31/07/2017

R1829QLL: Queen's University Belfast Core Equipment Call 2022
Kavanagh, P., Johnson, C. & Woods, R.
10/01/2023 → …
R1722CMM: Queen's University Belfast Imaging and Patterning Centre
Gregg, M., McNeill, D., Mitchell, N. & Woods, R.
20/02/2017 → 31/03/2018

R1728ELE: SHARES- System-on-chip heterogeneous architecture recognition engine for speech
Woods, R. & Ji, M.
01/08/2005 → …

R1128CSC: Softcore Streaming Processors for FPGA DSP
McAllister, J. & Woods, R.
01/08/2009 → 28/02/2014

R1917ECI: Support for International Workshop on Applied Reconfigurable Computing in 2008
Woods, R.
01/08/2007 → …

R1307ECI: WifiEar: A New Form of Telecoil
Woods, R. & Marshall, A.
01/08/2012 → …

**Awards**

**Activities**

Co-Design Workshop on Training the Next Generation of Postgraduate Researchers in Discovery AI for Health
Hui Wang (Organiser), Iain Styles (Speaker), Roger Woods (Speaker), Mauro Paternostro (Speaker), Paul Mullan (Speaker), Frank Kee (Speaker), Gary Hardiman (Speaker), Lorraine Martin (Participant), Ultan Power (Participant), Richard Gault (Participant), Stephanie Craig (Participant), Kris McCombe (Participant), Maeve Murphy (Participant), Xinjin Liang (Organiser) & Franziska Schroeder (Participant)
02 Jun 2023

31st International Conference on Field Programmable Logic & Applications
John McAllister (Chair) & Roger Woods (Chair)
29 Aug 2022 → 02 Sep 2022

Dynamic Multi-task Execution on FPGA-based Computing Systems
Roger Woods (Advisor)
11 Dec 2020

Meeting The Challenges of an Ageing Society
Roger Woods (Advisor)
17 Feb 2020

Big Data conference
Roger Woods (Participant)
24 Oct 2019

15th International Symposium on Applied Reconfigurable Computing
Roger Woods (Conference committee co-chair)
01 May 2019

Big Data Week
Roger Woods (Chair)
18 Oct 2018

**26th European Signal Processing Conference**  
Roger Woods (Member of programme committee)  
03 Sep 2018 → 07 Sep 2018

**International Conference on Field Programmable Logic and Applications**  
Roger Woods (Member of the organising committee)  
27 Aug 2018 → 31 Aug 2018

**UK Research and Innovation (External organisation)**  
Roger Woods (Advisor)  
20 Aug 2018 → …

**IEEE International Conference on Embedded Computer Systems: Architectures, Modeling and Simulation**  
Roger Woods (Member of programme committee)  
15 Jul 2018 → 19 Jul 2018

**14th International Symposium on Applied Reconfigurable Computing (Event)**  
Roger Woods (Board Member)  
02 May 2018

**Big Data conference**  
Roger Woods (Chair)  
19 Oct 2017

**Big Data Week**  
Roger Woods (Chair)  
17 Oct 2017

**IEEE International Workshop on Signal Processing Systems**  
Roger Woods (Member of programme committee)  
03 Oct 2017 → 05 Oct 2017

**FPL2017**  
Roger Woods (Member of programme committee)  
04 Sep 2017 → 08 Sep 2017

**17th International Conference on Embedded Computer Systems: Architectures, Modelling and Simulation**  
Roger Woods (Participant)  
17 Jul 2017 → 20 Jul 2017

**eFutures Annual Community Event**  
Roger Woods (Participant)  
23 May 2017

**International Symposium on Applied Reconfigurable Computing**  
Roger Woods (Member of programme committee)  
03 Apr 2017 → 07 Apr 2017

**IEEE Transactions on Very Large Scale Integration (VLSI) Systems (Journal)**  
Roger Woods (Peer reviewer)  
14 Mar 2017
FPL2017
Roger Woods (Advisory board member)
2017

Key Generation from Wireless Channels
Roger Woods (Invited speaker), Alan Marshall (Invited speaker) & Junqing Zhang (Invited speaker)
08 Dec 2016

Key Generation from Wireless Channels
Roger Woods (Invited speaker)
04 Dec 2016 → 08 Dec 2016

IEEE International Workshop on Signal Processing Systems
Roger Woods (Member of programme committee)
26 Oct 2016 → 28 Oct 2016

International Conference on Field-Programmable Logic and Applications
Roger Woods (Member of programme committee)
29 Aug 2016 → 02 Sep 2016

16th International Conference on Embedded Computer Systems: Architectures, Modeling and Simulation
Roger Woods (Member of programme committee)
17 Jul 2016 → 21 Jul 2016

Big Data Week
Roger Woods (Chair)
02 Jun 2016

Big Data conference
Roger Woods (Chair)
20 May 2016

International Conference on Field-Programmable Logic and Applications
Roger Woods (Advisory board member)
2016

IEEE International Workshop on Signal Processing Systems
Roger Woods (Member of programme committee)
14 Oct 2015 → 16 Oct 2015

International Conference on Field-Programmable Logic and Applications
Roger Woods (Member of programme committee)
02 Sep 2015 → 04 Sep 2015

IEEE International Conference on Embedded Computer Systems: Architectures, Modeling and Simulation
Roger Woods (Member of programme committee)
20 Jul 2015 → 23 Jul 2015
FPGA-based acceleration of data applications
Roger Woods (Advisor)
11 May 2015

Big Data Conference
Roger Woods (Chair)
23 Apr 2015

48th Asilomar Conference on Signals, Systems and Computers
Roger Woods (Chair)
02 Nov 2014 → 05 Nov 2014

IEEE Workshop on Signal Processing Systems
Roger Woods (Member of the organising committee)
22 Oct 2014 → 24 Oct 2014

Entrepreneurship in practice in a university setting
Roger Woods (Advisor)
16 Oct 2014

WiPhyLoc8: VLSI Algorithms and Architectures for Positioning and Security in Wireless Communication Systems
Roger Woods (Advisor)
06 Oct 2014

Workshop on FPGA-based Implementation of Signal Processing Systems
Roger Woods (Participant)
23 Jun 2014 → 27 Jun 2014

Big Data Week
Roger Woods (Chair)
07 May 2014

Research Excellence Framework (REF) (External organisation)
Roger Woods (Member)
2014

IEEE International Conference on Embedded Computer Systems: Architectures, Modeling and Simulation
Roger Woods (Vice chair)
15 Jul 2013 → 18 Jul 2013

Engineering & Physical Sciences Research Council (External organisation)
Roger Woods (Chair)
29 May 2013

Engineering & Physical Sciences Research Council (External organisation)
Roger Woods (Member)
06 Feb 2013

Novel architectures and design tools for the implementation of complex DSP systems on FPGA-based technologies
Roger Woods (Speaker)
08 Nov 2012

IEEE Signal Processing Summer School
Roger Woods (Organiser)
20 Aug 2012 → 24 Aug 2014
Research Excellence Framework (REF) Panel (External organisation)
Roger Woods (Member)
01 Apr 2011 → 31 Dec 2014

International Workshop on Applied Reconfigurable Computing
Roger Woods (Chair)
23 Mar 2011 → 25 Mar 2011

Engineering Policy Group Northern Ireland (External organisation)
Roger Woods (Vice Chair)
2011 → …

EPSRC Associate Peer Review College (External organisation)
Roger Woods (Member)
2011 → …

eFutures (External organisation)
Roger Woods (Board Member)
2010 → …

Microelectronics Design Grand Challenges: uGC1: Batteries Not Included
Roger Woods (Member)
23 Nov 2009

International Conference on Wireless Communications and Signal Processing, Nanjing, China
Roger Woods (Keynote/plenary speaker)
13 Nov 2009

17th European Signal Processing Conference (EUSIPCO-2009)
Roger Woods (Invited speaker)
27 Aug 2009

International Workshop on Applied Reconfigurable Computing
Roger Woods (Chair)
16 Mar 2009 → 18 Mar 2009

Analytics Engines Limited (External organisation)
Roger Woods (Board Member)
2007 → …

IEEE Advisory board to the IEEE Signal Processing Society Technical Committee on the Design and Implementation of Signal Processing Systems (External organisation)
Roger Woods (Board Member)
2007 → …

ACM Transactions on Reconfigurable Technology and Systems (Journal)
Roger Woods (Editorial board member)
2006

ACM Transactions on Reconfigurable Technology and Systems (Journal)
Roger Woods (Associate editor)
2005 → …
EURASIP Journal on Signal Processing (Journal)
Roger Woods (Editorial board member)
2004 → 2007

Journal of VLSI signal processing systems for signal, image and video technology (Journal)
Roger Woods (Editorial board member)
2003 → …

IET COMPUTERS AND DIGITAL TECHNIQUES (Journal)
Roger Woods (Associate editor)
2001 → …

Press clippings

£1M Investment in Analytics Engines Ltd.
Roger Woods
26/02/2014
1 item of Media coverage

A conversation with Analytics Engines' and Queen's University's Roger Woods
Roger Woods
01/09/2017
1 Media contribution

Analytics Engines | Stephen McKeown | Invest NI Support
Roger Woods
08/05/2013
1 Media contribution

Announcement of Analytics Engines investment
Roger Woods
12/03/2014
1 item of Media coverage

Artificial Intelligence Research in Northern Ireland
Godfrey Gaston, Jesus Martinez-del-Rincon, Paul Miller, Barry Devereux, Stuart Campbell, Seán McLoone & Roger Woods
01/04/2019
1 item of Media coverage

Big Data conference is a Titanic success
Roger Woods
20/10/2017
1 Media contribution

Commercialisation of hearing research
Roger Woods
02/09/2014
1 item of Media coverage

Enterprise Ireland Academic Award at the Enterprise Ireland Student Entrepreneur Awards 2017
Roger Woods
08/06/2017
1 Media contribution
Experts call for computing to become more like the human brain to protect planet
Roger Woods
18/10/2021
3 items of Media coverage

Hard Coding: The Benefits and Drawbacks of FPGAs
Roger Woods
27/01/2012
1 item of Media coverage

How remouldable computer hardware is speeding up science
Roger Woods
07/12/2021
1 Media contribution

Kelvin 2 supercomputer launched at Queen’s University in Belfast
Roger Woods
11/11/2022
1 Media contribution

Publicity for launch of WPhyLoc8 US-Ireland grant
Roger Woods
28/11/2012 → 01/02/2013
3 items of Media coverage

Queen's University's Woods Says FPGAs Becoming More Accessible
Roger Woods
23/11/2012
1 item of Media coverage