



NEXT-AI

2026

NEUROMORPHIX TECHNOLOGIES FOR FUTURE AI

Loughborough University, 8-10 April 2026

Welcome to NEXT-AI 2026

Dear Attendee,

We are delighted to welcome you to NEXT-AI 2026, one of the UK's first dedicated workshops on neuromorphic technologies and hardware AI. Over the next three days, we will bring together early- and mid-career researchers, industry innovators, start-ups, funders, and policymakers to explore the full neuromorphic development stack, from novel materials and platforms to algorithms and real-world applications.

This workshop has been made possible by the tremendous enthusiasm and support of our speakers, sponsors, and the broader neuromorphic community across the UK and beyond. We hope it will serve as a catalyst for new collaborations, ideas, and friendships.

Please do not hesitate to approach the organising team if you have any questions during the event. We wish you a productive and enjoyable three days.

Warm regards,

NEXT-AI 2026 Organisers

EVENT ESSENTIALS

Venue and Location

Venue	Holywell Park Conference Centre, Loughborough University
Address	Holywell Park, Loughborough, Leicestershire, LE11 3TU
Main talk room	Turing Meeting Room (Space 1)
Exhibition & posters	Babbage Open-Space Area (Space 3, directly outside Turing Room)
Venue website	www.holywell-park.co.uk

Key Contacts

General enquiries	info@next-ai.tech
Workshop website	next-ai.tech
Event Coordinator	Robin Rainier Loughborough University
Emergency Contacts	+44(0)1509 223383 / 07928652015

SOCIAL MEDIA

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Workshop Schedule

Wednesday 8th April 2026

10:00-11:00	Registration + Coffee
11:00-12:30	Opening Session & UK Landscape and Funding <i>Chair: Dr Juan Sebastian Totero Gongora, Loughborough University, UK</i>
11:00-11:10	Welcome remarks and sponsor acknowledgement <i>Prof. Claudia Eberlein. Dean of Science, Loughborough University</i>
11:10-11:25	EPSRC Neuromorphic Strategy <i>Dr Tomasz Kowalczyk, Portfolio Manager, EPSRC ICT</i>
11:25-11:40	NeuroSYNC-UK Multidisciplinary Centre for Neuromorphic Systems and Computing <i>Natalia Manuilovich. Aston University, UK</i>
11:40-11:55	NeuMat: Neuromorphic materials and Devices for Future AI Hardware <i>Prof. Adnan Mehonic. University College London, UK</i>
11:55-12:10	Rewiring AI: Neuromorphic Computing, Capital Flows, and the Race to the 2030s <i>Paul Larcey, Innovate UK</i>
12:10-12:25	Neuroware: Innovation and Knowledge Centre (IKC) <i>Prof. Adnan Mehonic, University College London, UK</i>
12:30-13:10	Lunch Break
13:10-15:00	NEXT Optoelectronics and Photonics I <i>Chair: Dr Javier Porte Parera, Univ. of Strathclyde, UK</i>
13:10-13:40	Keynote: Advanced materials for practical implementations of optical neural networks <i>Prof. Andrea Di Falco, St Andrews University, UK</i>
13:40-14:00	From training readout to input encoding: leveraging telecom photonics for optical neuromorphic computing <i>Dr Egor Manuylovich. Aston University, UK</i>
14:00-14:20	Novel fibre systems for neuromorphic computing <i>Dr Siddharth Sivankutty, CNRS University of Lille, France</i>
14:20-14:40	Principles and metrics of photonic learning machines <i>Dr Mathilde Hary, CNRS FEMTO-ST, France</i>
14:40-15:00	Learning Nonlinear Heterogeneity in Physical Kolmogorov-Arnold Networks <i>Dr Jack C. Gartside, Imperial College, UK</i>
15:00-15:30	Coffee Break
15:30-17:20	NEXT-AI in the Real World I <i>Chair: Dr Giulia Marcucci, LumiAIres Ltd, UK</i>
15:30-16:00	Keynote: Analog Optical Computer for Sustainable AI and Beyond <i>Dr Francesca Parmigiani, Microsoft Research Cambridge, UK</i>
16:00-16:20	Photonics: Enabling AI and Quantum Technologies <i>Jessica Steele, Hamamatsu Photonics UK</i>
16:20-16:40	Simulation-Driven Design of Photonic Platforms for High-Performance AI Hardware <i>Dr Shin-Sung Kim, Synopsis</i>
16:40-17:20	Discussion panel: Optica x NEXT-AI Startups <i>Chair: Dr Jon Pugh, Optica</i>
17:20-17:30	Break
17:30-18:15	ECR Career Discussion panel

18:15-19:30 **Poster and Networking Session / Drinks Reception**

19:30-21:00 **Conference Dinner - Holywell Park Conference Centre**

Thursday, 9th April 2026

08:00-09:00 **Registration + Coffee**

09:00-10:30 **NEXT-Generation Platforms: Biological Systems**

Chair: Dr Juan Toterogongora, Loughborough University, UK

09:00-09:30 Keynote: Engineering living brain circuits

Prof. Paul Roach, Loughborough University, UK

09:30-09:50 Engineering Neural Circuitry to model biological neuronal networks

Dr Eric Hill, Loughborough University, UK

09:50-10:10 Brain-inspired complexity metrics for photonic neuromorphic computing

Dr Oliver Neill, University of Glasgow, UK

10:10-10:30 Protobrain from thermal proteins

Prof. Andrew Adamatzky & Dr Panagiotis Mougkogiannis, UWE Bristol, UK

10:30-11:00 **Coffee Break**

11:00-12:30 **NEXT Algorithms and Co-Design I**

Chair: Dr Shirin Dora, Loughborough University, UK

11:00-11:30 Keynote: Timing-Native Address Selection for Spiking and Neuromorphic Hardware

Prof. Natalia Berloff, University of Cambridge, UK

11:30-11:50 Hardware Fault Detection and Tolerance using Spiked-based Approaches

Prof. Jim Harkin, Ulster University, UK

11:50-12:10 Co-designing programmable accelerators for event-based training and inference

Dr James Knight, University of Sussex, UK

12:10-12:30 Tackling Reliability and Scalability in Neuromorphic Computing via Noise-aware Learning

Prof. Eleni Vasilaki, University of Sheffield, UK

12:30-13:30 **Lunch Break (with Poster session)**

13:30-15:00 **NEXT Optoelectronics and Memristors I**

Chair: Prof. Sergey Saveliev, Loughborough University, UK

13:30-14:00 Keynote: Edge of Chaos and Entropy Production Minimization as Keys to Neuromorphic Computing

Prof. Stan Williams, Texas A&M, USA (online)

14:00-14:20 Materials design for multi-level resistive switching devices

Dr Markus Hellenbrand, University of Cambridge, UK

14:20-14:40 Model free end-to-end training and performance predictors for computing with physical systems

Prof. Daniel Brunner, CNRS FEMTO-ST, France

14:40-15:10 **Coffee Break**

15:10-17:00 **NEXT-AI in the Real World II**

Chair: Dr Giulia Marcucci, LumiAlres Ltd, UK

15:10-15:40 Keynote: Neuromorphic technology for low power edge AI inference

Laurent Hili, European Space Agency, NL

15:40-16:00 Co-Design Across the Stack for Efficient ML Inference

Alessandro Pierro, LMU Munich, Germany

16:00-16:40	Discussion panel: Chips, Clusters & Capital-Building Europe's NEXT-AI Ecosystems <i>Chair: Ofer Shayo, London Ignite</i>
16:40-17:10	ECR Flash Talks Session
17:10-18:30	Poster and Networking Session
18:30-19:30	Sir Nevill Mott Lecture 2026 (Sponsored by IOP) Precision Materials Science of Functional Oxide Thin Films <i>Prof. Judith MacManus-Driscoll FREng FRS, University of Cambridge, UK</i>
20:30	ECR Social event (details to follow) <i>Jam Garden, Bedford Sq, Loughborough LE11 2TP</i>

Friday, 10th April 2026

08:00-09:00	Registration + Coffee
09:00-10:30	NEXT-Generation Platforms: Quantum AI <i>Chair: Dr Juan Toter Gongora, Loughborough University, UK</i>
09:00-09:30	Keynote: Applications of photonic quantum computers in AI <i>Dr William Clements, ORCA Computing</i>
09:30-09:50	Dynamics as Computation <i>Dr Gerard McCaul, Loughborough University, UK</i>
09:50-10:10	Beyond Classical: Quantum Hardware Manufacturing in the UK <i>Dr Jack Brennan, University of Glasgow</i>
10:10-10:30	Quantum reservoir computing with linear photonic networks <i>Dr Oliver Neill, University of Glasgow, UK</i>
10:30-11:00	Coffee Break
11:00-12:30	NEXT Algorithms and Co-Design II <i>Chair: Shirin Dora, Loughborough University</i>
11:00-11:30	Keynote: Perspectives on and beyond Reservoir Computing <i>Prof. Claudio Gallicchio, University of Pisa, Italy</i>
11:30-11:50	SteganoSNN: SNN-Based Audio-in-Image Steganography with Encryption <i>Dr Pedro Machado, Nottingham Trent University, UK</i>
11:50-12:10	Scalable architectures for neuromorphic AI <i>Dr Anand Subramoney, Royal Holloway, Univ. of London, UK</i>
12:10-12:30	Neuromorphic multimodal sensor fusion <i>Dr Luca Peres, University of Manchester, UK</i>
12:30-13:15	Lunch Break
13:15-13:45	ECR Flash talks session
13:45-14:00	ECR Poster prize announcement <i>Poster prizes donated by Cambridge University Press</i>
14:00-15:00	NEXT Optoelectronics and Memristors II <i>Chair: Sergey Saveliev, Loughborough University, UK</i>
14:00-14:30	Keynote: Oxide-Based Resistive Switching for Energy-Efficient Memory and Computing <i>Prof. Adnan Mehonic, University College London, UK</i>
14:30-14:50	Nanoporous oxide memristors for time series prediction via physical reservoir computing <i>Dr Pavel Borisov, Loughborough University, UK</i>
14:50-15:10	Optical Memristors for Neuromorphic Computing: From Light-Sensitive Materials to Ultrafast

Photonic Chips

Prof. Neil Kemp, University of Nottingham, UK

15:10-15:30 Coffee Break

15:30-17:00 NEXT Optoelectronics and Photonics II

Chair: Javier Porte Parera, Uni of Strathclyde, UK

15:30-16:00 Keynote: Novel Materials and Nanoarchitectures for Neuromorphic Computing

Prof. Dimitra Georgiadou, University of Southampton, UK

16:00-16:20 Artificial Photonic Spiking Neurons for SNN platforms

Dr Joshua Robertson, University of Strathclyde, UK

16:20-16:40 Neuromorphic Computing with Integrated Opto-Electronic Devices

Dr Nikolaos Farmakidis, University of Exeter, UK

16:40-17:00 Optical Human Action Recognition leveraging free-space optics and basic arithmetic

Maximilian Zier, Technische Universität Ilmenau, Germany

17:00 Event Closure



On-site facilities

- Registration desk open from 10:00 on Wednesday 8 April and from 08:00 on Thursday 9 and Friday 10 April.
- Catering (coffee, lunch, and refreshments) is provided in Space 3 throughout the event.
- Poster session space and exhibitor booths are in the Space 3 open-space area.

Poster Sessions and Flash Talks

We invite presenters to display their posters in the Babbage area (Space 3) throughout the workshop. Boards and fixings will be provided on site. Flash talks for selected presenters will take place on Thursday and Friday.

Accessibility & Assistance

Holywell Park Conference Centre is a fully accessible venue. If you have any access requirements or need assistance during the event, please speak to a member of the organising team at the registration desk or contact info@next-ai.tech.

PRACTICAL INFORMATION

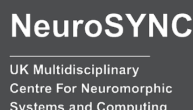


Parking

Parking for guests is free of charge at the Workshop venue, but the University now operate a monitored system where parking is chargeable elsewhere on campus.

Please ensure that you register your vehicle on the iPad at the Registration desk to avoid any unnecessary penalties. You can select the duration of parking so that you only have to do this once throughout your stay.

ORGANISERS



LUMIAIRES

Central Organisation Team

Dr Juan Toterogongora	Emergent Photonics Research Centre, Loughborough University
Natalia Manuilovich	Aston University, NeuroSYNC-UK Multidisciplinary Centre for Neuromorphic Systems and Computing
Dr Xavier Porte-Parera	University of Strathclyde, NeuroSYNC-UK Multidisciplinary Centre for Neuromorphic Systems and Computing
Dr Shirin Dora	Loughborough University
Dr Giulia Marcucci	LumiAlres Ltd (CEO)
Dr Robin Rainier (Coordinator)	Emergent Photonics Research Centre, Loughborough University

Organisation and Advisory Committee

Prof. Sergey Saveliev	Dept. of Physics, Loughborough University
Prof. Alexander Balanov	Dept. of Physics, Loughborough University
Dr Ofonime Udoudo	Partnership Development Manager, Loughborough University
Phil Whitby	Partnership Development Associate, Loughborough University

Early Career Researchers Committee

Dr Luana Olivieri	(Chair), Loughborough University
Dr Antonio Cutrona	(Vice-chair), Loughborough University
Dr Luke Peters	Loughborough University
Matthew Wilson	University of Strathclyde
Aisha Kanwal	University of Strathclyde
Fatima Khanom	Aston University
Luca Calçado	Aston University
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Loughborough University, 8-10 April 2026

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