



The University of
Nottingham

UNITED KINGDOM - CHINA - MALAYSIA



NETT Summer School 2013

University Park, University of Nottingham

Welcome

Welcome to Nottingham!

Whether you are here as part of the NETT programme or are participating for your own interest, we hope you enjoy your time with us.

NETT (Neural Engineering Transformative Technologies) is an Initial Training Network funded by the European Commission, designed to train the next generation of neural engineers. This summer school brings together international experts to discuss the state of the art in the field. It also includes tutorial presentations for those new to the field as well as training sessions from our industrial partners National Instruments and Brain Products.

If you have any queries as the event progresses, please do contact the organisers Professor Stephen Coombes and Dr David Hawker. Information about the event and a copy of this booklet will appear on the main NETT website <http://www.neural-engineering.eu/>

NETT Partners

The NETT programme is a partnership between the University of Nottingham, Imperial College London, University of Minho (Portugal), Polytechnic University of Catalonia (Spain), Centre of National Research (Italy), Radboud University Nijmegen (Netherlands) and BitBrain Technologies Ltd (Spain), together with associate partners in industry.

Acknowledgements

We acknowledge the funding support of the European Commission. We thank the local support team at Nottingham for their assistance, particularly Tory Hayward and Liz French



School of Mathematical Sciences, University of Nottingham

Programme

The conference will be held entirely on the main University Park campus of the University, with all talks being in room C27 of the Physics building. Lunch and refreshments will be provided on-site. The conference dinner will follow talks on Thursday 4 July. The Friday sessions are in A17 in the Maths building. The organisers are happy to advise participants on possible eateries for other meals.

Monday 1 July 2013			
09.00-09.30	<i>Arrivals and registration</i>		
09.30-09.45	Steve Coombes	University of Nottingham	Welcome and introduction
09.45-10.30	Bert Kappen	Radboud University Nijmegen	A neural mechanism for planning of goal directed behaviour
10.30-11.15	John Van Opstal	Radboud University Nijmegen	Neural control of eye-head gaze shifts by the monkey superior colliculus
11.15-11.30	<i>Refreshments – Mathematical Sciences Building, Atrium</i>		
11.30-12.15	Bert Kappen	Radboud University Nijmegen	Smart Research BV
12.15-13.00	Antonio J Pons	Polytechnic University of Catalonia (UPC)	A mesoscopic study of the Excitatory/Inhibitory coupling effect on Synchronization and Segregation
13.00-14.00	<i>Buffet Lunch – Mathematical Sciences Building, Atrium</i>		
14.00-15.00	Chris Eliasmith	University of Waterloo	Tutorial: Neural engineering from single cells to cognition, part 1
15.00-15.15	<i>Refreshments – Mathematical Sciences Building, Atrium</i>		
15.15	<i>Close</i>		

Tuesday 2 July 2013			
10.00-10.45	Noah Russell	University of Nottingham	tbc
10.45-11.30	Chris Sumner	University of Nottingham	tbc
11.30-11.45	<i>Refreshments – Mathematical Sciences Building, Atrium</i>		
11.45-12.45	Chris Eliasmith	University of Waterloo	Tutorial: Neural engineering from single cells to cognition, part 2
12.45-13.45	<i>Buffet Lunch – Mathematical Sciences Building, Atrium</i>		
13.45-14.45	Dominique Durand	Case Western Reserve University, Cleveland, Ohio	Interfacing with the Peripheral Nervous System
14.45-15.45	Jan Danckhaert	Vrije Universiteit Brussels	tbc
15.45-16.15	<i>Refreshments – Mathematical Sciences Building, Atrium</i>		
16.15-17.15	Eduardo Miranda	University of Plymouth	Music Neurotechnology: Research at the Crossroads of Music and Neural Engineering
17.15	<i>Close</i>		

Wednesday 3 July 2013			
10.45-11.15	Wolfram Erlhagen	University of Minho	A dynamic neural field approach to robot task learning
11.15-11.30	<i>Refreshments – Mathematical Sciences Building, Atrium</i>		
11.30-12.30	Michaela Chiappalone	Italian Institute of Technology	Linking biological and artificial systems: towards the future integration of brain and machines
12.30-13.30	<i>Buffet Lunch – Mathematical Sciences Building, Atrium</i>		
13.30-14.30	Chris Eliasmith	University of Waterloo	Tutorial: Neural engineering from single cells to cognition, part 3
14.30-15.30	Alessandro Torcini	Institute of Complex Systems, CNR	The Sisyphus Effect in neural networks with spike timing dependent plasticity
15.30-16.00	<i>Refreshments – Mathematical Sciences Building, Atrium</i>		
16.00-17.00	Members only	C29, Physics Building	RTMB and Supervisory board meetings
17.00	<i>Close</i>		

Thursday 4 July 2013			
10.00-10.45	Ingo Fischer	University of the Balearic Islands	Implementing Neuro-Inspired Information Processing Using Photonic Systems
10.45-11.00	<i>Refreshments – Mathematical Sciences Building, Atrium</i>		
11.00-12.00	Marc Timme	MPI Göttingen	Adaptive Neural Computation: From Single Neurons to Robot Behavior
12.00-13.00	David Grayden	University of Melbourne	Data-driven neural mass modelling
13.00-14.00	<i>Buffet Lunch – Mathematical Sciences Building, Atrium</i>		
14.00-15.00	Steve Schiff	Penn State University	Toward Model-Based Observability and Control in Neural Engineering
15.00-16.00	Antonio Hurtado	University of New Mexico and University of Essex	Laser-Neurons: Neural Dynamics on a much faster time-scale
16.00-16.15	<i>Refreshments – Mathematical Sciences Building, Atrium</i>		
16.15-16.45	Manuel Rito	AMI-HPG	tbc
16.45	<i>Close</i>		
19.00	<i>Conference dinner – Orchard Hotel, University of Nottingham</i>		

Friday 5 July 2013			
Note: Sessions today are in A17, Mathematical Sciences Building			
09.30-11.00	National Instruments	National Instruments	Introduction to LabVIEW
11.00-11.15	<i>Refreshments – Mathematical Sciences Building, Atrium</i>		
11.15-12.45	National Instruments	National Instruments	Introduction to LabVIEW
12.45-13.45	<i>Buffet Lunch – Mathematical Sciences Building, Atrium</i>		
13.45-15.30	Brain Products	Brain Products	Introduction to Analyzer 2 software (ERPs/EEG data analysis)
15.30-15.45	<i>Refreshments – Mathematical Sciences Building, Atrium</i>		
15.45-17.15	Brain Products	Brain Products	Introduction to Analyzer 2 software (ERPs/EEG data analysis)
17.15	<i>Close</i>		

Talks

Invited Speakers

Name Antonio Hurtado

Title Laser-Neurons: Neural Dynamics on a much faster time-scale

Name Chris Eliasmith

Title Neural engineering from single cells to cognition (Tutorial)

Name David Grayden

Title Data-driven neural mass modelling

Name Dominique Durand

Title Interfacing with the Peripheral Nervous System

Name Eduardo Miranda

Title Music Neurotechnology: Research at the Crossroads of Music and Neural Engineering

Name Ingo Fischer

Title Implementing Neuro-Inspired Information Processing Using Photonic Systems

Name Jan Danckhaert

Title tbc

Name Marc Timme

Title Adaptive Neural Computation: From Single Neurons to Robot Behavior

Name Michaela Chiappalone

Title Linking biological and artificial systems: towards the future integration of brain and machines

Name Steve Schiff

Title Toward Model-Based Observability and Control in Neural Engineering

Lectures and Seminars from NETT members and partners

Name Alessandro Torcini

Title The Sisyphus Effect in neural networks with spike timing dependent plasticity

Name Antonio Pons

Title A mesoscopic study of the Excitatory/Inhibitory coupling effect on Synchronization and Segregation

Name Bert Kappen

Title A neural mechanism for planning of goal directed behaviour

Name Chris Sumner

Title tbc

Name John van Opstal

Title Neural control of eye-head gaze shifts by the monkey superior colliculus

Name Manuel Rito

Title tbc

Name Noah Russell

Title tbc

Name Wolfram Erlhagen

Title A dynamic neural field approach to robot task learning

Participants

Name	Association	Country	Role
Stephen Coombes	University of Nottingham	UK	Organiser
David Hawker	University of Nottingham	UK	Organiser
Tory Hayward	University of Nottingham	UK	Local support
Antonio Hurtado	University of New Mexico/ University of Essex	USA/ UK	Invited speaker
Chris Eliasmith	University of Waterloo	Canada	Invited speaker
David Grayden	University of Melbourne	Australia	Invited speaker
Dominique Durand	Case Western Reserve University	USA	Invited speaker
Eduardo Miranda	University of Plymouth	UK	Invited speaker
Ingo Fischer	University of the Balearic Islands	Spain	Invited speaker
Jan Danckhaert	Vrije University Brussels	Belgium	Invited speaker
Marc Timme	MPI Göttingen	Germany	Invited speaker
Michaela Chiappalone	IIT Genova	Italy	Invited speaker
Steve Schiff	Penn State University	USA	Invited speaker
Alessandro Torcini	CNR Institute of Complex Systems	Italy	NETT member
Antonio Pons	Polytechnic University of Catalonia	Spain	NETT member
Axel Hutt	INRIA/LORIA Nancy grand Est	France	NETT member
Bert Kappen	Radboud University Nijmegen	Netherlands	NETT member
Chris Sumner	University of Nottingham	UK	NETT member
John van Opstal	Radboud University Nijmegen	Netherlands	NETT member
Jordi Garcia Ojalvo	Polytechnic University of Catalonia	Spain	NETT member
Manuel Rito	AMI-HPG	Portugal	NETT member
Noah Russell	University of Nottingham	UK	NETT member
Simon Schultz	Imperial College London	UK	NETT member
Thomas Kreuz	CNR Institute of Complex Systems	Italy	NETT member
Wolfram Erlhagen	University of Minho	Portugal	NETT member
Alban Levy	University of Nottingham	UK	NETT fellow
Alessandro Barardi	Polytechnic University of Catalonia	Spain	NETT fellow
Andreea Ioana Sburlea	Bit Brain Technologies	Spain	NETT fellow
Bahadir Kasap	Radboud University Nijmegen	Netherlands	NETT fellow
David Angulo Garcia	CNR Institute of Complex Systems	Italy	NETT fellow
Luca Antonello Anecchino	Imperial College London	UK	NETT fellow
Maciej Jedynek	Polytechnic University of Catalonia	Spain	NETT fellow
Nebojsa Bozanic	CNR Institute of Complex Systems	Italy	NETT fellow
Nitzan Herzog	University of Nottingham	UK	NETT fellow
Romain Caze	Imperial College London	UK	NETT fellow
Sid Visser	University of Nottingham	UK	NETT fellow
Aaron Cuevas Lopez	Polytechnic University of Valencia	Spain	Participant
Alessia Dessi	University of Cagliari	Italy	Participant
Alma Rahat	University of Exeter	UK	Participant
Andrea Moiola	University of Reading	UK	Participant
Aytul Gokce	University of Nottingham	UK	Participant
Becky Sharman	University of Nottingham	UK	Participant
Georgina Fenton	University of Nottingham	UK	Participant
Giansalvo Cirrincione	University of Picardie	France	Participant
Harald Hinterleitner	Johannes Kepler University Linz	Austria	Participant
Helmut Schmidt	University of Exeter	UK	Participant
Jonathan Crofts	Nottingham Trent University	UK	Participant
Kyle Wedgwood	University of Nottingham	UK	Participant
Lars Keuninck	Vrije University Brussels	Belgium	Participant
Mayte Bonilla Quintana	University of Nottingham	UK	Participant

Michelle Margetts	University of Nottingham	UK	Participant
Mozhgan Mombeini	IPM Tehran	Iran	Participant
Reuben O'Dea	University of Nottingham	UK	Participant
Romain Modeste Mguimdo	Vrije University Brussels	Belgium	Participant
Ruth Smith	University of Nottingham	UK	Participant
Stephanie McGarrity	University of Nottingham	UK	Participant
Tobias Bast	University of Nottingham	UK	Participant
Wilhelm Braun	University of Nottingham	UK	Participant

Local Info

Internet Access

This is freely available across the University campus including in the Orchard hotel, through the wireless networks 'UoN-guest' or 'Eduroam'.

Transport Links

Buses

The indigo bus run by Trent Barton goes every few minutes to and from Broadmarsh Bus Station in the centre of Nottingham – take the stop outside the Queen's Medical Centre (QMC) which is just outside University Park campus. <https://www.trentbarton.co.uk/services/indigo/maps-and-times> (all routes go past the University).

Alternatively, from Canal Street (outside of Broadmarsh Bus Station) you can catch Nottingham City Transport (NCT) buses numbers 13 or 14 straight to University Park campus (the 13 goes right through the middle of campus). <http://www.nctx.co.uk/Buses/13> or <http://www.nctx.co.uk/Buses/14/>.

Both options are £1.70 for a single ticket. The NCT buses do not issue change.

The Skylink runs from Broadmarsh Bus Station to East Midlands Airport 24 hours a day <http://www.eastmidlandsairport.com/emaweb.nsf/Content/SkyLinkNottingham>. Tickets are £5.

Taxis

The largest taxi provider in Nottingham is D&G. These are used by the University and well-trusted. <http://www.dgcars.co.uk/>. You will need to book on 0115 9500 500 or 0115 9607 607.

The only taxis that can be approached in the street are the large (usually dark green) taxis with the light on top – similar to the London taxis. There are taxi ranks around the City, including outside Broadmarsh Bus Station, around the Railway Station and at numerous places in the Centre.

It will typically cost around £8 for a single journey between the city centre and the University.

Trams

'NET' trams connect the Railway Station to the City Centre but from there only travel North and do not connect at present to the University. <http://www.thetram.net/>. Single tickets (off-peak) are £1.90.

Local sites of interest

Nottingham Castle

Hard to miss. The original castle was destroyed but still interesting. <http://www.nottinghamcity.gov.uk/index.aspx?articleid=1262>. Close by is 'Ye Olde Trip to Jerusalem' which is supposedly the oldest pub in England (dates back to 1189).

Nottingham Caves

Bizarrely you get to these from within Broadmarsh shopping centre! <http://www.cityofcaves.com/>

Galleries of Justice

In the Lace Market area of the City. <http://www.galleriesofjustice.org.uk/>

Wollaton Park

Right next to the University, free to enter and also where the latest Batman film was shot (recognise the Hall?). <http://www.nottinghamcity.gov.uk/index.aspx?articleid=2915>

Many other things are in or around Nottingham. There's also the theatres, ice centre and arena, football grounds, Trent Bridge cricket ground, several cinemas, etc. <http://www.nottinghamcity.gov.uk/index.aspx?articleid=98>

Location

The talks will all take place in room C27 in the Physics Building. Refreshments and lunch will be served in the Mathematical Sciences Building next door. The management meeting on Wednesday will be in room C29 of the Physics Building. The conference dinner will be in the Orchard Hotel, where many participants are staying for the event. All these are marked on the map below.

