

**Induction Meeting**  
MSc Natural Computation  
MSc Intelligent Systems Engineering

Xin Yao

Per Kristian Lehre

29 September 2008

# MSc in Natural Computation

# MSc in Intelligent Systems Engineering

*Programme Directors and Academic Advisors:*

- **Professor Xin Yao, Room 211**
- **Dr. Per Kristian Lehre, Room 244**

(We will be able to respond more promptly if you send emails to both of us, as sometimes one of us may be away for conferences.)

# Research and Teaching Staff

- Dr Chris Bowers
- Dr John Bullinaria
- Dr Richard Dearden
- Dr Shan He
- Bob Hendley
- Dr Ata Kaban
- Dr Ricardo Landa
- Dr Per Kristian Lehre
- Dr Xiaoli Li
- Dr. Paul Marrow (BT)
- Dr Tapabrata Ray (until Feb. 2009)
- Dr Philipp Rohlfshagen
- Dr Jon Rowe
- Dr Ramon Sagarna
- Dr Thorsten Schnier
- Prof. Dr. Bernhard Sendhoff (Honda)
- Dr Iain Styles
- Dr Peter Tiño
- Prof. Xin Yao

# Recognition for World Class Research

- **50+ invited keynote / plenary** speeches at prestigious international conferences
- **30+ chairs / co-chairs** of international conferences.
- **Leadership positions** in professional bodies (e.g., IEEE)
- **Prestigious lectures and honours:**
  - *Fellows* of IEEE and BCS
  - IEEE Computational Intelligence Society *Distinguished Lecturer* (USA);
  - *Sterling Hou Lecturer* (University of Missouri – Columbia, USA);
  - *Cheung Kong (Changjiang) Scholar* (Ministry of Education, China);
  - *Grand Master Chair Professorship* (USTC, China)

# Recognition for World Class Applications

- DTI's **GlobalWatch Magazine** in Spring 2006
  - Listed as one of the top two UK innovative companies.
- **The Hindu**, the national newspaper in India, Sci Tech section in Feb. 2007

*“... Arguably the largest such group worldwide — over 50 strong — is the Centre of Excellence for Research in Computational Intelligence and Applications (CERCIA) launched just 4 years ago, as a joint project of the University of Birmingham in the U.K. and ‘Advantage West Midlands’, the local agency that is charged with putting the area on the entrepreneurial map of Britain. ...”*
- **TechnologyWorld07** (UK Trade and Investment), April 2007

*“Cercia, ... helps provide the solutions to varied and complex business issues. Its technologies, which lie mainly within the areas of adaptive optimisation, data mining, machine learning and creative design, are being successfully applied to many sectors, including retail, aerospace, automotive, transportation, logistics, medical and manufacturing, and are used in both small and large companies. ...”*
- UK Trade and Investment **“Our World”**, July 2007
- **The Economist**, September 2007

*“Thorsten Schnier, a researcher at Cercia, an offshoot of the computer science department at Britain's University of Birmingham, believes that algorithms based on biological systems offer great potential. ...”*

# Recognition for World Class Teaching

- **MSc in Natural Computation** was set up in 2001, with over £700k support from EPSRC and industry and 200k euros from the EC.
- **MSc in Intelligent System Engineering** was set up in 2006 in response to Industrial Advisory Board feedback and suggestion.
- Xin Yao, "A research-led and industry-oriented MSc program in Natural Computation," *IEEE Computational Intelligence Magazine*, 1(1):39-40, February 2006.
- We now have imitators, ...

# The Birmingham Triangle



**Applied Research  
and Knowledge  
Transfer:**

**CERCIA**



**Basic Research:**

**Natural Computation Group**



**Training and Teaching:**

**MSc in Natural Computation**

# Industrial Advisory Board

- For both programmes
- Annual meeting and poster presentation (competition)
- Project co-supervision and placement
- Some IAB members:
  - Honda Research Institute Europe GmbH
  - BT
  - Unilever
  - GSK
  - Rolls-Royce
  - QinetiQ

# MSc Programme Structure

- The programme has 180 credits
  - 120 taught credits consisting of
    - core modules
    - optional modules
  - 60 credits summer project

# Module Selection for MSc in ISE Students

- Do read the handbook
- MSc in ISE
  - Must be *exactly 20 credits* Level 3 modules
- Form filling
- Need my signature
- **1600 hrs, 10th October 2008:** Last date for changing first term modules

# MSc ISE Module Choices

Choose 40 credits from (level 4/M)

Module Title	Sem 1	Sem 2
Computer Security	10	
Human Computer Interaction (MSc)	10	
Intelligent Robotics (Extended)	20	
Machine Learning (Extended)	10	
Software Testing	10	
Mathematical Programming 1	10	
Combinatorial Optimisation		10
Nonlinear Programming	10	

Choose 20 credits from

Module Title	Sem 1	Sem 2
Commercial Programming	10	
Computational Vision		10
Distributed Systems		10
Formal Methods		10
Intelligent Robotics	20	
Machine Learning	10	
Natural Language Processing		10
Software Engineering	10	10
Lin. Prog. & Oper. Mgmt A	10	
Lin. Prog. & Oper. Mgmt B		10

Detailed programme description on the web:

<http://www.cs.bham.ac.uk/internal/programmes/2008/MScISE.html>

# Module Choice for MSc in NC

- Easy task: you don't really have choices.
- Must be all *Level 4/M* modules.
- **1600 hrs, 16 October 2008:** Declaration of 1st semester module choice

# Mini-Projects for MSc in NC Students

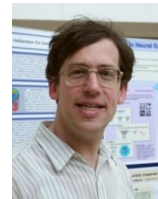
- Plenty of choice for mini-projects.
- **Plan** ahead.
- **Pro-activeness** and independence are essential.
- **Depth** is essential.
- **Novelty** is important.
- Make best use of the **expertise in the School**.
- Make best use of our **IAB** members!
- **1600 hrs, 23 October 2008:** Declaration of 1st semester mini-project

# Additional Supports

- Read the Handbooks
- We have an Industrial Advisory Board of distinguished members from major companies.
- Industrial projects are encouraged
- Interdisciplinary projects are encouraged
- *Papers and travel funds*
- Best poster/project award

# Support Systems

- Academic (personal) advisors
  - academic matters
  - module selection
  - Feedback
  - Check our timetables on the web /doors
- Welfare Team
  - personal matters
  - Dr Volker Sorge
  - Dr Eike Ritter
  - Dr Iain Styles
  - Mrs Caroline Wilson



# This Week's Timetable

- **Monday**
  - 13.00 Lectures begin.
- **Tuesday**
  - Registration of computer accounts:
    - 14.00 UG04 (Learning Centre) MSc NC
    - 15.00 UG04 (Learning Centre) MSc ISE
- **Wednesday**
  - 14.00 English test for overseas students, Vaughan Jeffries lecture theatre (campus map R19)
  - 16.30-17.30 Induction meeting for international students, UG40, Computer Science (campus map Y9)
- **Thursday**
  - 17.00-19.00 Reception for postgraduate students. CS Atrium.
- **Friday**
  - *11.00-12.00 Introduction to Evolutionary Computation* lecture

# Other Information Sources

- **Handbook** (on **web**)
  - includes frequently asked questions
- Timetables (on the **web**)
- Useful URLs
  - See page 3 in handbook

# Please Return Forms

- Address Form to be returned **immediately**
- FIN41 (Finance Office) form
  - If you do not have your bank details, complete the form later and hand in to Reception FAO Marcelle Kohler.
  - Marcelle Kohler needs the forms **before 12 today** for maintenance payments to be made by Friday.

# **Last But Not Least**

- Enjoy and have fun!