



THE UNIVERSITY OF SHEFFIELD

Vice Chancellor: Professor R F Boucher, CBE, PhD (Nottingham), HonDHL (State University of New York), CEng, FIMechE, FASME, MIEEE, HonRNCM, FEng

DEPARTMENT OF COMPUTER SCIENCE

Head of Department: Professor Mahesan Niranjan BSc (Peradeniya), MEE (Eindhoven), PhD (Cantab)

PROFESSOR OF COMPUTER SCIENCE

REF. No: R3207

Applications are invited for a Chair in Computer Science within the Department of Computer Science (rated 5 in the 2001 Research Assessment Exercise).

Applications are invited from outstanding candidates with research interests in Speech Technology or Theoretical Computer Science. The appointee will have an international research standing and be able to enhance links both within and beyond the University, and with industry. In addition to research, the appointees will be expected to take part in teaching and curriculum development at both undergraduate and postgraduate levels.

THE UNIVERSITY OF SHEFFIELD – INFORMATION FOR APPLICANTS

The University of Sheffield is one of the UK's leading universities, with an international reputation for excellence. Its mission is to maintain the highest standards of research scholarship and to educate students in a high-quality learning environment, nurturing a spirit of enterprise and helping them to fulfil their individual potential.

Excellence in research

In constantly developing the quality and diversity of its research across an unusually wide range of subjects, the University has appointed many outstanding staff to its multidisciplinary research groups. In the most recent Research Assessment Exercise 35 subject areas achieved the top two grades, 5* and 5 – only five other universities exceeded that number. Annual income for pure and applied research is fast approaching £100 million.

Sheffield University Enterprises Ltd (SUEL), a wholly owned technology transfer subsidiary, has a portfolio of more than 70 projects developed out of our research, and more than 40 companies have already been founded.

Excellence in learning and teaching

The University maintains high standards in its undergraduate programmes. Our long-established internal teaching quality assurance mechanisms have contributed to impressive results in the Quality Assurance Agency's Subject Reviews. The University has earned 'excellent' ratings in 29 subjects – one of the best outcomes for any university.

Strategic alliances

The University is a founder member of two major alliances. The *Worldwide Universities Network* is a consortium of 13 research-led universities in the UK, USA and China. It exists to capitalise on growing global markets in research, postgraduate degree programmes and continuing professional development. The *White Rose Consortium*, comprising Leeds, Sheffield and York universities, exploits the combined research power of the three and invests in spin-out companies.

International and national honours

In the 1990s two of our graduates won Nobel Prizes; Dr Richard Roberts in 1993 for Medicine/Physiology and Professor Sir Harry Kroto in 1996 for Chemistry. Our other Nobel Laureates are Professor Sir Hans Krebs, 1953 for Medicine/Physiology, and Lord Porter, 1967 for Chemistry.

Since 1998 three Queen's Anniversary Prizes, academic equivalents to the Queen's Award to Industry, have recognised the University's pioneering work – in creating definitive electronic editions of major literary texts, in environmental consultancy for industry and government, and in research into improving quality of life for older people.

Campus, students and staff

The University received its Royal Charter in 1905. The academic buildings – a mixture of Edwardian and modern – are set in pleasant suburbs in the west of Sheffield, close to the Peak National Park and about a mile from the city centre. A five-year £100 million building programme is providing new and refurbished accommodation for many departments, as well as state-of-the-art sports facilities.

At present the University has 23,100 full-time and part-time students; 18,050 undergraduates and 5,050 postgraduates, including 2,700 international students from 117 countries. With 5,400 staff it is Sheffield's third largest employer.

What the neutrals say

The Sunday Times University Guide chose Sheffield as 'UK University of the Year 2001/02', for its outstanding teaching and research assessments, low drop-out rate and overall student experience.

The 2003 *Times Good University Guide* confirms the University's excellence across a wide range of academic disciplines. Fifteen departments hold top-five positions in subject league tables for teaching and research quality; only three other universities better that number.

In the *Virgin 2003 Alternative Guide to British Universities*, which focuses strongly on the quality of the student experience, the University of Sheffield ranks third in the league table, and the *Guardian* rates our award-winning Union of Students "best of its kind".

The world ranking of universities listed at: <http://ed.sjtu.edu.cn/ranking.htm> places Sheffield as 7th in the UK, 18th in Europe and 68th in the world.

The City of Sheffield

Sheffield offers outstanding quality of life, an attractive, green environment – with the Peak District right on its doorstep – affordable living costs, excellent schools, short travel-to-work times, leading NHS care and a wide choice of good value housing.

According to the latest Home Office statistics, Sheffield is England's safest city. According to a recent Barclay's survey, the parliamentary constituency which includes much of our campus, Sheffield Hallam, is the second most affluent in England in real terms.

As you would expect in England's fourth largest city, there's a wealth of leisure, entertainment, sports and recreational opportunities to suit all ages, tastes and abilities.

THE DEPARTMENT OF COMPUTER SCIENCE

The Department currently has 33 members of academic staff (including 10 professors), 9 technical support staff, 6 secretaries, 25 post doctoral research staff and 60 post-graduate research students. It has seen rapid growth in recent past, both in research and teaching. In terms of the Research Assessment Exercise (RAE), the Department has monotonically improved in its rating, achieving a 5 in the most recent assessment. Sustained strategic investment by the University in the last two years has shifted the academic work balance in the Department from a "teaching intense" to a "research-intense" profile. Student-staff ratios have been brought down: 19:1 (2001), 17:1 (2002), 14:1(2003), and is projected to stabilise at 12:1 from next year onwards. The University is committed to further investments in staffing, teaching laboratories and computing equipment in the near future. There has also been substantial campus-wide investment into high performance computing

and inter-disciplinary research facilities. The Department has active participation in these initiatives and benefits from them.

Research has historically been organised in six research groups: Verification and Testing, Speech and Hearing, Natural Language Processing, Machine Learning, Neural Computing and Robotics and Computer Graphics. Recently the Department initiated and rapidly expanded into the area of Computational Biology and has established a new research group in this area, overlapping with several of the groups identified above. Six members of academic staff identify themselves with various specific topics in this subject.

The Department has an undergraduate intake of about 70 each year, and offers single honours degrees in Computer Science, Software Engineering and Artificial Intelligence. It also offers dual degrees with a number of other Departments in the Faculty of Engineering and Pure Sciences. A notable example of a successful interdisciplinary degree is in Aerospace Engineering, a collaboration between five Departments in the Faculty of Engineering, with Computer Science contributing about a fifth of the curriculum. The Department also has a thriving Postgraduate Taught programme and offers Masters' degrees in Advanced Computer Science, Advanced Software Engineering and Software Systems Technology. Substantial part of the curriculum emphasises project based learning, especially in the Software Engineering strands of teaching. A particular innovative aspect of this is the student run company Genesys Solutions, in which groups of students work on external software contracts with real clients who pay for the product.

With this Chair appointment, the Department wishes to further enhance its activities in the Speech and Hearing or Theoretical Computer Science areas. Current research activities in these areas are described below:

Research in Speech and Hearing:

The Speech and Hearing Research Group (SPandH) was established in 1986. Since then, it has gained an international reputation for research across many areas involving the processing of sound. SPandH has 23 members: 6 faculty (Prof. Phil Green, Prof. Martin Cooke, Dr. Guy Brown, Dr. Yoshi Gotoh, Dr. Jon Barker, Dr. Thomas Hain), 5 research associates and 12 research students.

The group is concerned with:

Computational modelling of auditory and speech perception in humans and machines (Guy Brown, Martin Cooke)

Robustness in speech perception (Martin Cooke) and in automatic speech recognition (Jon Barker, Martin Cooke, Phil Green)

Audio-visual speech (Jon Barker)

Large vocabulary speech recognition systems and their applications (Yoshi Gotoh, Thomas Hain)

Speech Technology in Speech Training (Phil Green)

An aspect of the group which makes it unique in the United Kingdom is this spectrum of research topics, from the psychology of hearing through to

the engineering of large vocabulary speech recognition systems. It is our belief that studies at different points in this spectrum can and should be mutually beneficial.

SPandH is currently funded by the EC Framework 5 and Framework 6 programmes, the UK EPSRC funding agency, the UK NHS, Qinetiq and Motorola. SPandH collaborates with several other groups at Sheffield, which together form one of the strongest clusters in these fields worldwide:

The Machine Learning group in Computer Science (Prof. Mahesan Niranjan)
The Natural Language Processing group in Computer Science (Prof. Yorick Wilks, Prof. Rob Gaizauskas, Prof. Lyn Walker)
The Computational Informatics group in Information Studies (Prof. Steve Whittaker)
The School of Health and Related Research (Prof. Pam Enderby)
The Department of Human Communication Sciences (Prof. Bill Wells).

Research in Verification and Testing:

The Verification and Testing research group (VT) originated as the Theory group in 1986. It has gained an international reputation in testing and the foundations of software engineering. More recently interests have developed in empirical software engineering and computational and theoretical biology. VT has 7 academics (Dr. Kirill Bogdanov, Eur. Ing. Dr. Anthony Cowling, Dr. Marian Gheorghe, Prof. Michael Holcombe, Dr. Anthony Simons, Dr. Michael Stannett and Dr. Siobhan North), an Honorary Professor (Prof. Graham Birtwistle), 2 research fellows and 15 PhD students.

The current interests of the group cover:

formal description of software systems, including parallel and distributed communicating systems (Mike Holcombe, Tony Cowling, Tony Simons, Marian Gheorghe, Kirill Bogdanov)
complete formal verification of hardware, especially microprocessor architecture (Graham Birtwistle)
type theory, syntax design and efficient implementation of object-oriented programming languages (Tony Simons)
modelling and testing of safety-critical systems including hybrid control systems (Mike Holcombe, Tony Cowling, Tony Simons, Marian Gheorghe, Kirill Bogdanov)
formal characterisation of biosystems, P-systems, membrane systems (Mike Holcombe, Marian Gheorghe)
the engineering of provably correct design practices and automatic test-set generation for industrial software design tools (Mike Holcombe, Tony Cowling, Tony Simons, Marian Gheorghe, Kirill Bogdanov)
the development of a complete functional testing method for object-oriented systems (Mike Holcombe, Tony Cowling, Tony Simons, Marian Gheorghe, Kirill Bogdanov)
empirical evaluations of complete software development processes, particularly comparing agile and traditional methodologies (Mike Holcombe, Tony Cowling, Marian Gheorghe)

improvement of object-oriented software engineering methods to handle cognitive focus and gestalt perception effects; improvement and formal underpinning of object oriented design notations to support automated reasoning (Tony Simons)

the development of information-sharing tools to support distributed communities of experts over the Web (Siobhan North)

Hypercomputation - Comparative Analysis of Hypercomputational Models; Concurrency, Biocomputing and Quantum Computing; Computational Financial Theory (Mike Stannett)

The groups interests are very wide and cover many theoretical and mathematical aspects of software engineering, hardware and computational theory. What is perhaps unusual is that the breadth of interests does not preclude collaboration between what might seem to be rather disparate fields. Many members of the group are also members of the Computational Biology group. We are keen to apply our theoretical results in real industrial situations and there are many opportunities to do this, in some cases under the laboratory conditions offered by the Sheffield Software Observatory (this is based around the commercial software house - Genesys Solutions (www.genesys.shef.ac.uk) - that is run by the Department. The group has funding from EPSRC, EU, DaimlerChrysler, BT and works closely with a number of industrial companies including IBM, ARM etc.

JOB DESCRIPTION

Teaching

Teaching on the Department's undergraduate and postgraduate degrees.
Supervision of research by and teaching of postgraduate students.
Design, evaluation and delivery of new modules.
Overall student welfare in Department.

Research

Developing an internationally competitive research team.
Development of relevant research links with external institutions.
Generation of a wide portfolio of continuous research income.
Publications in high impact factor journals.
Sustaining of external professional activities.

Administration

Participation in departmental and university wide committees.
Future Head of a teaching section.
Future Head of a research cluster.
Member of departmental management committee.

The post holders are expected:

To generate external research income and establish a strong publication record that will strengthen the Department's research rating.
 To provide high quality teaching and show innovation in the design and delivery of new course work.
 To assist in the efficient administration of admissions and undergraduate teaching in the Department.
 To undertake national or international commitments that will lead to the expansion of both individual and departmental reputations.

PERSON SPECIFICATION

	Essential	Desirable
Attainments/Education	PhD in an area relevant to Computer Science	
Experience/Work	Strong publication record. Proven track record in generating research income. Experience of teaching undergraduate students.	Development of new courses/ student projects. Track record of collaborative research work with Industry, if appropriate. Management experience.
Skills/Abilities	Analytic, presentational and communication skills. Able to carry out administrative duties effectively. Good interpersonal skills. Able to work effectively within the Departmental team. Proven capacity to work to and meet deadlines.	Proven commitment to excellence in undergraduate teaching.

FURTHER INFORMATION: The post is available immediately subject to negotiation with the appointee.

INFORMAL ENQUIRIES: Prospective applicants are welcome to address informal enquiries to Professors Mahesan Niranjan (M.Niranjan@Sheffield.ac.uk), Phil Green (P.Green@dcs.shef.ac.uk) or Mike Holcombe (M.Holcombe@dcs.shef.ac.uk).

SALARY: By agreement.

TERMS AND CONDITIONS OF EMPLOYMENT: Salary will be within the range for Non-Clinical Professorial appointments. The other terms and conditions of service will be those standard for a Non-Clinical Professor.

CLOSING DATE: 10 March 2004.

PLEASE QUOTE REFERENCE NO:

HOW TO APPLY:

Please send: a) your full curriculum vitae with a covering letter explaining your interest in, and suitability for, this vacancy, and the names and addresses of three referees (two copies of each)

b) a completed Summary Information Form/Equal Opportunities Monitoring Form

by post to: The Staff Recruitment Service
Department of Human Resources - Personnel Services
The University of Sheffield
Firth Court
Western Bank
SHEFFIELD S10 2TN

or in person to: The Staff Recruitment Service
Department of Human Resources - Personnel Services
The University of Sheffield
10 - 12 Brunswick Street
SHEFFIELD S10 2FN
(Reception is open Monday-Friday 9am - 5pm).

CIRCULATION OF APPLICATIONS

As part of the selection process, applications may be considered by a number of appropriate staff within the recruiting department, and a cognate department, in addition to the shortlisting/interview panel(s). Please state within your covering letter if you do not wish your application to be released in this manner, or whether you would prefer it to be circulated on a restricted basis, e.g. as an anonymous CV.

INTERVIEW EXPENSES

Candidates attending interview should request the relevant claim form from the recruiting department on the day of the interview. For travel within the UK, the University will defray standard second class return rail fare and reasonable subsistence expenses. Claims for car mileage will not be accepted without prior agreement. Arrangements for travel from outside the UK must be made with the recruiting department in advance of the interview. For all requests for interview expenses, documentary evidence, e.g. original receipts, will be required.

The persons whom the University considers may not be limited to those who make applications in accordance with the current advertisement.

The University is committed to equality through diversity

THE UNIVERSITY OF SHEFFIELD

Vice-Chancellor: Professor R F Boucher, CBE, PhD (Nottingham), HonDHL (State University of New York), CEng, FIMechE, FASME, MIEEE, HonRNCM, FREng

APPOINTMENT OF A PROFESSOR OF COMPUTER SCIENCE

TERMS & CONDITIONS OF SERVICE

1. You will be required to devote your whole time to serving the University as a Professor of Computer Science in the Department of Computer Science.

You will further be required to observe the Charter, Statutes and Ordinances of the University, to carry out all orders and regulations of the Council and the Senate and to work such number of hours as are necessary to carry out the duties of the post.

You will be required to assist and support the Head of your Department to whom you will be responsible.

You may be required to serve as Head of the Department of Computer Science in accordance with present, or any future, University policy relating to the selection, appointment, duties and responsibilities of Heads of Departments. During any period of service as Head you will be an ex officio member of the Senate, subject to the Statutes of the University. You may also be appointed to serve at any time on any other University body or committee and/or as a representative of the University on other bodies.

You will be responsible for providing academic leadership including the prosecution and encouragement of original studies in the subject of your Chair and for furthering the influence of your subject upon other fields of academic work.

2. It is the University' spolicy to encourage members of staff to undertake a reasonable amount of consultancy work.

In normal circumstances and subject to prior notification to your Head of Department, up to 35 days of paid outside consultancy may be undertaken in any academic year (taking term-time and vacations together); approval to undertake such consultancy shall not normally be withheld by Heads of Departments, provided the work involved is in the general interests of the University.

Where a member of staff wishes to undertake a total of more than 35 days' consultancy in any one year, a recommendation must be made via the Head of Department to the Vice-Chancellor. If approval for more than 35 days is

given, the fees received in excess of 35 days shall be the subject of individual negotiation but the share of the consultancy income accruing to the University and Department shall not normally be less than 50% of the fee for the days beyond 35.

3. You will be required to make such arrangements in regard to place of residence as will allow you to carry out effectively all your University duties and responsibilities and play the full part in the work and life of the University appropriate to your post. The allocation of duties and responsibilities between staff cannot normally be modified to take account of residential factors.
4. Removal expenses will be paid to staff taking up appointments with the University of not less than two years' duration in accordance with the regulations approved by the Council of the University.
5. The salary will be within the range for non-clinical professorial appointments. Salary will be payable monthly in arrear from the date on which you begin duty.
6. You may, subject to the rules of the Universities Superannuation Scheme Ltd., become or continue as a member of the Universities Superannuation Scheme Ltd.

A contracting-out certificate under the Social Security Pensions Act 1975 is in force for appointments subject to the Universities Superannuation Scheme.

7. You are allowed annual holidays on full pay totalling six weeks, exclusive of statutory holidays, in any one 12-month period beginning on 1 October. Holidays shall be taken by agreement with your Head of Department. On termination of your employment, you will be entitled to take paid holiday or payment in lieu of holiday, being the proportion of your entitlement for the period you have worked during the leave year and for which you have not taken holidays. Payment in lieu of holiday will not be made where agreement is made with a new employer to take over responsibility for accrued holiday entitlement. Holiday entitlement is not transferable from one leave year to another.
8. You will be a member of the Senior Common Room; membership carries with it the obligation (which is revocable) to payment of an annual subscription to be effected by deduction from salary in a single month of each year.
9. You are required to attend training and such courses on matters concerning Health, Safety and Welfare at Work as may be arranged for you.
10. Appointments are terminable at any time by three months notice from either side, the notice taking effect (except in the case of non-teaching staff) at the end of a University Semester. However subject to mutual agreement the

requirements for the notice to take effect at the end of a Semester may be waived.

For staff who carry out teaching duties, full details of notice periods can be found on the Personnel Department web pages.

11. You are required by Statute to retire from your post on 29 September following the date on which you attain the age of 65 years unless the Council by a vote of at least one-half its total members shall request you to continue for a period not exceeding five years after which retirement will be compulsory.
12. The University Council has approved a formal procedure which you may follow if you wish to seek redress of any grievance relating to your employment.
13. Paid leave of absence on grounds of ill health is granted in accordance with the regulations approved by the Council of the University.
14. If you believe that there is patentable property arising out of your University work you must inform the Registrar and Secretary as soon as possible and certainly before any disclosure or publication of the invention. The University will then determine as soon as possible whether it will proceed and file a patent application, agreeing with you that any future benefits of exploitation will be shared between you and your Department and the University, or will notify you that the University has no interest in the invention and that you are free to proceed at your own risk and cost.
15. The Association of University Teachers (AUT) is recognised by the University Council as the sole bargaining agent for the terms and conditions of service of non-clinical academic and academic related staff subject to AUT/University Authorities Panel salary agreements. These terms and conditions are therefore subject to the collective agreement between the University Council and the AUT at the time being in force to give effect to the Association's position as sole bargaining agent for the above mentioned staff.
16. No member of the University apart from the Registrar and Secretary as Secretary to the University Council or the Director of Human Resource Management has authority to make any offer to, or to notify any change in the terms and conditions of appointment of, any new or existing member of staff. If any other member of staff purports to make any offer or effect any change in the terms and conditions of appointment as aforesaid, the University will not be bound by any such offer or change.

Ms R A Valerio
Director of Human Resource Management

