GUSTT at Goldsmiths
FURTHER PARTICULARS

1 GUSTT

A technical outline of the GUSTT project is given on the GUSTT web page at

`www.gold.ac.uk/~mas01mh/gustt.html`

This document provides details pertaining to the environment in which the GUSTT RA will be working. Additional details can be found in the various web pages cited in this document.

The project will involve the development of amorphous slicing technology and is led by Mark Harman, an internationally recognised expert in slicing theory and applications. The project will involve travel to Durham University and to national and international conferences. The post holder will be based at Goldsmiths college in New Cross, London.

Informal enquiries to Dr. Mark Harman are strongly encouraged. Mark can be contacted by email to `m.harman@gold.ac.uk`, by phone to 0171 919 7960 (direct line) or by FAX to 0171 919 7853.

The person appointed to the Goldsmiths' RA post associated with GUSTT will be provided with a state-of-the-art Pentium II and their own individual study room within the department. Provision is also made for travel, both to the partner institution (Durham) and to national and international conferences.

He or she will work within the VAST (Verification and Analysis using Slicing and Testing) group, which currently comprises, 5 academic staff, 6 research students and one Research Associate (the post advertised under GUSTT). VAST is a rapidly expanding group within the department, providing an excellent supportive and collaborative environment in which to conduct leading research in source code analysis and manipulation. A brief overview of the VAST group can be found on the web at

`www.gold.ac.uk/~mas01mh/vast.html`

The rest of this document describes the department, its facilities, location and staff and Goldsmiths college as a whole.

2 The Department

The newly-formed computing section of the department of Mathematical and Computing Sciences is located in homely Victorian town houses, enhancing the quiet, warm and secluded environment which is to be found throughout the college. The staff find this low key, informal and friendly environment highly conducive to both collaborative and individual research. The departmental buildings are surrounded by small town house gardens. In spring and summer the mauve lavender, blue and yellow irises and pink cherry blossom, make the department one of the most attractive locations in London in which to pursue research.

Staff regularly attend seminars and meetings at other colleges within the University, and there is a lively set of research seminars held within the department to which members of the department, the University and other local Universities attend.

Recent Goldsmiths seminar speakers have included Prof. Igor Alexander (Imperial, Neural networks), Prof. Keith Bennett (Durham, Transformation), Prof. David Binkley (Loyola College, Maryland, Amorphous program slicing), Prof. Jingde Cheng (Cheng Labs, Japan, Program slicing for parallel systems), John Clarke (York, Testing and GAs), Dr. Sebastian Danicic (UNL, Dataflow minimal program slicing), Dr. John Derrick (UKC, Testing), Prof. Mike Holcombe (Sheffield, Testing), Prof. Michael Jackson (Consultant, Software development), Prof. Bryan Jones (Glamorgan, Testing using GAs), Dr. Stuart Reid (Cranfield RMCS, Testing), Dr. Marc Roper (Strathclyde, Testing), Prof. Martin Shepperd (Bournemouth, Predication systems in software engineering), Prof. Dan Simpson (Brighton, Program slicing), Dr. Martin Woodward (Liverpool, Slicing OBJ specifications) and Dr. Hongji Yang (DeMontfort, Program slicing and transformation).

All staff have their own individual offices equipped with Pentium PCs running DOS, Windows and/or a PC based UNIX O/S such as Linux. The members of the VAST group tend to prefer the Linux environment.

There are currently 10 computing staff. Two new appointments will bring the total staff in computing to 12. An additional chair in Computing and/or IS will be advertised in the autumn. The department has 11 full-time and 3 part-time research students.

The computing section is small and friendly, and prides itself on its open and lively research culture, notable for its collaborative, informal and co-operative nature.

Development funding of £335,000 for a masters degree in computing has been approved by the University of London. A major programme over the next three years will establish the M.Sc. degrees both internally and as part of the University's External System involving the appointment of further members of staff.

The present equipment includes 60 networked PCs running Windows 95, together with UNIX servers that provide X-clients for the PCs. These laboratories and the computing equipment of the staff of the department are administered and maintained by the Departmental Systems Administrator. The College Computing Service also maintains four laboratories with PCs, Macintoshes and terminals for general use. These machines and individual staff PCs are connected via Ethernet to the College's mainframe and to the London Metropolitan Area Network, superJANET and the Internet.

The department is the academic leader (within the University of London) for the B.Sc. degree programme in Computing and Information Systems for students of the External System run by the University. Remunerated opportunities, for example marking and examination setting, are available if a member of staff wishes, but these are not compulsory. Currently, nearly 2000 students are registered for this degree and the numbers are rising yearly. The department is using much of the profits of this programme to increase the profile of the computing staff, with respect to both the range of topics covered in its teaching and its research activity.

The department has at present four professors, one reader, two senior lecturers, thirteen lecturers, a systems administrator and an Academic Administrator. Two secretaries staff the departmental office.

Computing started within the existing Mathematics department relatively recently (in 1996). The submission to the 1996 RAE for computer science therefore reflected the research of a newly formed unit of assessment. This explains the comparatively low rating achieved (grade 2). The aim is to raise this to 4 in the 2001 exercise. This is thought to be the maximum acceleration allowed by the RAE assessment mechanism and is well within the department's ability.

Significant progress has already been made towards achieving this goal. The computing section has more than doubled in size since 1996. Staff have recently been successful in grant applications totalling nearly £400,000. Several research students have been taken on under departmental bursaries with three new bursaries being filled this year. Staff are involved in the organisation of several IEEE conferences, are on the editorial boards of leading journals and regularly publish results in the leading international research journals. Over the next two years several national and international conferences and workshops are to be held at Goldsmiths covering topics in program slicing and analysis and genetic algorithms.

3 Staff and their Research Interests

Full details are available on the departmental web page (`mcs.gold.ac.uk`). This section lists computer science staff research interests only.

Professor Nelson Stephens (Head of Department)
Algorithms, cryptography, information security and computational number theory.

Dr. Chris Fox (Lecturer)
Computational semantics of natural language relevant to natural language front-ends, automatic language translation systems and program slicing.

Dr. Mark Harman (Lecturer)
Program slicing, transformation, testing, genetic algorithms, metrics and formal methods.

Dr. Rob Hierons (Lecturer)
Formal specification languages, software testing, program slicing, software reliability, finite state automata and matroid theory.

Dr. John Howroyd (Lecturer)
Program slicing, real analysis, geometric measure theory and domain theory.

Dr. Jasna Kuljis (Senior Lecturer)
Human computer interaction, visualisation, design of graphical user interfaces, information systems and program slicing.

Dr. Peter McOwan (Lecturer)
Computational methods for vision, neurobiologically inspired hardware and software, visual perception and cognitive neuroscience.

Mr. James Ohene-Djan (Lecturer)
Multi-media and web-based commerce.

Dr. Ida Pu (Lecturer)
Probabilistic and average case algorithmics, data structures, networks and communications and complexity theory.

Mr. Marian Ursu (Lecturer)
Intelligent assistants, knowledge based systems, knowledge representations and constrained databases.

4 Goldsmiths College, University of London

Goldsmiths College was founded in 1891 by the Worshipful Company of Goldsmiths as the Company's Technical and Recreative Institute, in buildings originally designed for the Royal Naval School. In 1904 the Senate of the University of London accepted the Company's offer of the site and the buildings, and established Goldsmiths College to serve the people of South East London.

Goldsmiths is a small and lively college. There are about 5,000 students (smaller than many of the large colleges of the University) and about 300 academic staff. The college is sited on a single campus, with halls of residence and all other facilities on campus. It is about 30 minutes by train to the west end of London, yet is located in an area of London (New Cross) which maintains the cheapest rental and purchase prices for accommodation in London. Greenwich observatory is just the other side of the Thames from college, with the adjacent millennium dome clearly visible from the new purpose built library building.

Goldsmiths College fully became a constituent college of the University of London in 1988. The University is the second largest university in the United Kingdom after the Open University. It is England's third oldest University, established by Royal Charter in 1836. As a federal university, consisting of more than forty Colleges, Research Institutes and Associate Institutes, the University can offer over two thousand programmes, and extensive academic and social facilities, without losing the closely-knit social context preferred by most students and staff.

Goldsmiths recently bought the impressive Grade II listed, Deptford Town Hall and plans to build a large new arts building next door. The college is internationally renowned for music, drama and fine art and this exciting creative activity is strongly felt on the vibrant, young and dynamic campus. There is always plenty to do and see on campus at Goldsmiths, which boasts the liveliest student life and cultural environment of any of the London colleges. The students' union events are regularly praised by *Time Out* (London's listings and cultural magazine) and many internationally leading artists and musicians work at Goldsmiths and have studied here.

Goldsmiths' Senior Common Room provides a tranquil yet stimulating environment, with a south-facing balcony overlooking the central quadrangle of the main college building. The SCR is a regular lunch-time meeting place for members of the department, within which there is always lively discussion and debate.