Advice on 4th Year Computer Science Projects for Examination in Trinity Term of 2010

Master of Computer Science
Master of Mathematics & Computer Science

Computer Science candidates are required to undertake a project in the fourth year. Mathematics and Computer Science candidates have the option to take a project, either a Computer Science project or a Mathematics project; a Mathematics project can either be a whole unit or a half unit. Fourth year Computer Science projects are similar in style to third year projects although we would expect students to provide a greater contribution and show a greater depth of understanding and accomplishment. These informal notes are intended to supplement, but not to replace, the formal regulations in the grey book, and to amplify the advice given in the Course Handbook. Questions can be addressed to the project coordinator, Geraint Jones (geraint@comlab).

1 Amount of work

The project amounts to about one third of the work in the fourth year of the course, and one third of the examination credit, and so should be thought of as occupying about a term's work in total. For the project to go smoothly without your feeling under time pressure, it is important to settle on your project and find a project supervisor in Hilary Term of your 3rd year, and make good preparation over the Long Vacation. The norm is that the first draft of your report is finished during the Easter vacation of the fourth year.

2 Choosing a project

You should begin by discussing your choice of project and the list of potential supervisors with your tutor. A project might involve the specification, design and implementation of a piece of software or hardware, or the use of existing computing tools to develop some proofs or similar pieces of mathematics. A list of outlines for projects is published by the Computing Laboratory at

http://web.comlab.ox.ac.uk/teaching/bacompsci/PartC/projects/index.html

Projects need not be drawn from this list, but it may serve both as a guide to drawing up proposals and as a help in finding supervisors. Many supervisors are willing to discuss variations on the project topics they have suggested, or to consider different projects within the same general area that are suggested by candidates themselves. If you want to suggest your own project, then you should discuss the possibilities with your tutor and with potential supervisors. Your tutor may be able to supervise the project, or it may be better to choose another supervisor whose interests fit the project better. Note particularly that the Regulations require that the project be on a topic in *Computer Science*; this means that projects whose main focus is business or economic aspects of the use of computers are not likely to be accepted. Certain supervisors are more popular than others, and supervisors may decide that they cannot take on any further students.

3 Proposing a project and registering

A project proposal must be approved by the Teaching Committee for Computer Science; in practice this responsibility is delegated to a Projects Committee. Whether you choose a project from the published list or propose your own, it is best to make contact with a supervisor and get his or her agreement before submitting your proposal. Supervisors are normally expected to be a member of the Faculty of Computer Science or Faculty of Mathematics or the Faculty of Engineering Sciences. If you are unable to find a supervisor, please indicate at least three projects from the list (from at least two different possible supervisors) and the Projects Committee will endeavour to find an appropriate supervisor.

Proposals should be delivered to Ms. Jo Leggett at the Computing Laboratory, Wolfson Building, Parks Road, by Wednesday of week 9 of Hilary term of your third year.

4 Reporting

The Examination Regulations require project reports to consist of at most 10,000 words and 40 pages of additional material. The report should be typed, and this is intended to mean reports that are formatted with a word-processor or typesetting software such as LaTeX. Two copies of the report must be submitted to the Examination Schools by a set date in Trinity Term. It is appropriate for supervisors to read and comment on a draft of the report, and to offer advice on suitable references and methods. It is also possible for the work reported upon to be a part of a piece of work being undertaken by several people, but the contribution of the individual project must be clearly identifiable and clearly explained in the report. The report must be the work of the candidate alone.

The Examination Regulations do not lay down a format for the report, but there is some guidance in the Course Handbook. It should be considered to be a technical document designed to be readable by a person who is neither the candidate nor the supervisor. It will probably be examined by two examiners, who will not necessarily be experts in the area of the project, so you should assume a good general understanding of Computer Science, but should not assume any specific technical knowledge on the part of the reader. Since it is the report that is seen and considered by the examiners, its writing should be treated as a substantial part of the work involved and a suitable amount – possibly a fifth – of the time should be allocated to it.

If the project (as most do) involves the creation of a piece of software, then the report should contain an account of the design of the software and the strategy used to test it. You are also encouraged to include in the report a section about what you learned by doing the project; this may well refer to approaches that were tried and did not work.

Supervisors are also asked by the examiners to answer a questionnaire about the project and the amount of help they gave. This questionnaire helps the examiners to satisfy themselves that the project is your own work, and to assess the contribution you made in carrying it out. The supervisor will also want to be able to report to the examiners that the software is working properly, and for this purpose you should make sure that the supervisor can see a demonstration of it in action towards the closing stages of the project. It is up to you to agree with him or her when this takes place and what form of demonstration is appropriate to the kind of software you have developed. There is no need to arrange a separate, formal

demonstration if the supervisor has seen the software in action over the course of its development.

Projects are treated as a separate unit of assessment in the examination, and carry a weight equal to two fourth year options. They are marked in four categories: technical accomplishment; plan, method and relationship to context; exposition; and overall impression. Technical accomplishment is weighted twice as heavily as the other categories.