MSc Arts Computing
PhiloSophia

Director: Prof. Frederic Fol Leymarie

Digital Studios, Goldsmiths College, University of London

June 6, 2006

This programme provides an introduction to advanced computing topics and techniques in the context of visual arts and design. It will give you a firm foundation in Computing, which will enable you to take on a leading role in a creative or technical industry, go on to do academic research at the boundary between computing and art, or produce artworks that are informed by the latest thinking in Computer Science.

One feature of this programme which distinguishes it from most others, is its emphasis on giving you a sound introduction to Computing as it applies to the Arts. You will learn to open the "black boxes" of softwares (*e.g.*, to understand features and parameters behind a tool like PhotoShop, and possibly modify these, or invent your own), as well as hardwares (*e.g.*, via workshops on design and physical computing where you learn to use sensors, and build physical interfaces out of keyboard, simple electrical networks, LEDs, *etc.*). You may not become an expert at any particular popular softwares, but instead, you shall feel free to augment or even reinvent these, think out of the box, and create really unique applications and novel digital art and practice.

What you will study

The programme is presently structured around three taught units (one half-unit per semester) and one research project unit.[1]

Unit 1: Object Oriented Programming in Java for the (Visual) Arts

This unit gives you an in-depth introduction in the object-oriented approach to the design and implementation of software systems. The course also considers the particular features of the programming language Java — graphical interfaces, event driven applications, applications distributed over the Internet — that are most relevant for applications to the arts.

---

[1]This is to be updated in the near future to 4 taught units and 1 research project unit.

Unit 2: Computer Applications in the (Visual) Arts

During the course of this unit you will study systems for data storage and manipulation (aka "DataBase Management Systems") that are relevant to the arts. You will develop an understanding of the theoretical models behind such systems and of the contexts in which they can be used. You will also acquire technical skills in the manipulation of such systems. This unit is focused on database systems and digital media production systems (*e.g.*, Flash, Photoshop).

Unit 3: Computing and the Arts

This unit provides you with theoretical and practical knowledge of fundamental fields defining the intersection between Computing and the Arts: models of perception (cognitive, mathematical), computer vision (where such models are put in practice for the visual understanding of images), computer graphics (the genesis of images and other datasets), image processing (giving you in-depth insights in the computational techniques behind most Photoshop-like tools), and more advanced topics such as fractals, cellular automata, 3D digital sculpting. The course is also animated by invited guest speakers: artists, scientists, critics (check the website for past events). This unit leads you to refine and define a research project proposal toward the completion of your final unit.

Unit 4: Research project

This is your final unit, which you may pursue after the successful completion of all above taught units. By that time, you will have define a project proposal on a topic of your choice. We will support you with a state-of-the-art lab. space: the Digital Studios in our new Ben Pimlott building. You can find out more on the website; check also the projects of past and present students to get an idea of the depth and breadth of these. Some MSc students have seen their work selected for exhibits in the London area and even have been invited to International Workshops and Conferences.

For more details, contact Professor Frederic Fol Leymarie (ffl@gold.ac.uk) and check the website for the programme, where course outlines, calendars of events, links to past and present students and their projects, *etc.*, can be found:

- http://doc.gold.ac.uk/mscac/ .