Note 01 | 4/11 April / 2/11/17 May 2011

Outline & Schedule

Content

Digital Media is a field of study and research between *aesthetics* and *algorithmic*s. This study requires activities, among others, of *interpretation* and *construction*. These two are not unique to the field of digital media, not at all. There must be an emphasis, however, on the rigorous study of *both at the same time*. Interlinked, interwoven, intertwined. Aesthetics: how humans perceive digital media; algorithmics: how machines must function to become digital media.

Sir C.P. Snow was most likely not thinking of digital media when he gave his lecture, in 1959, on the *The Scientific Revolution and the Two Cultures*. Since then, the situation of the world has changed, and it is still changing, dramatically. The Cold War has come to an end. Capitalism has triumphed. It is rampaging around the world in its uncessant drive for quantity, and crises of huge dimensions are the necessary consequences. Huge catastrophes are hitting the world, nature is taking revenge (you might think or say), and people revolt against dictators and suppressors.

The media question is gaining importance, the *society of the spectacle* (Guy Debord) is taking on form. A community of high-power intellectuals or experts has arisen who call themselves the representatives of an emerging *third culture*. They may not belong to the digital media community (some probably do), but there *is* such a community of the third culture.

Of the Bremen joint international study programme on digital media, the algorithmic stance is regarded by a considerable percentage of students as difficult and hard to understand. The issue is not so much students' performance in matters of algorithmics, but our attitudes towards algorithmics. We need to develop modes of thinking in algorithmics as well as aesthetics, concurrently.

I invite you to join me for such an effort. This course will be done as a seminar. Much of its success will depend on your activities (you may gain 6 points of credit!). We'll study digital images from algorithmic, aesthetic, philosophical, and political perspectives. We will start from a question like: How can a program draw a straight line? (Or: How can the operating system of a computer detect which item on the screen was hit by the mouse cursor when the mouse button was clicked?) And we should end with something like: What is the power of an image from Japan? (Or: What is realistic in photorealistic rendering?) And: How does light come into the computer, how does it come onto a canvas? How do you do central perspective?

The seminar will study a bouquet of published papers and texts. At the beginning, we collect topics such that a maximum of the interests of paricipants may be taken up during the semester. We organize them in a sequence, and we assign a few (or only one) persons to each topic. Their job will be to get acquainted with and research their chosen topic deeply enough to present their findings in such a way that all of us may gain some new insight.

Conditions for credit

You may take the course just for fun and interest. If you do so, I recommend that you work hard nevertheless. Otherwise you cannot take much out of it. I expect you to put into the seminar a substantial amount of your own work. We must be aware of this condition and organize the course such that you all get a realistic chance to propel forward your algorithmic and your aesthetic skills and knowledge. We will have a mixture of lectures, exercises, tests, reading assignments, group work, oral presentations, and written essays. We should definitely organize an extra closing day for wrapping up our results.

You may gain 6 credit points if you are actively participating throughout the term.

Active participation requires your presence and noticeable involvement. In particular, you demonstrate this participation in the following way: you offer a critical reflection on one of our topics. You choose one of the topics. You study it carefully and deeply. You approach it from an algorithmic as well as an aesthetic point of view. This may involve some programmed construction (which is welcome). You give an oral presentation of your topic (about 30 minutes). You write an essay about your topic (about 10 pages). Upon submission of the paper, you briefly summarize it in a final conclusion.

Schedule of meetings and topics

Date	Topic	Presenter
11 April	First introduction: Your interests and intentions, my offers and options? Collecting topics, organizing our work. Conditions for credit	
18 April	Some background of construction and interpretation: C.P. Snow, Guy Debord, John Brockman. We work towards a detailed plan for the term. Indication of what we do: „The line"	
25 April	– National holiday –	
2 May	„Lines and curves". How can a program draw a line or curve?	FN
9 May	„Point and plane". How can a program decide which item is clicked?	FN
16 May	„Perspective drawing and painting". How did the Renaissance artists do this, how does an algorithm do perspective?	Hector
23 May	„Light and surface". How does light get into the computer or onto a canvas?	Jan Ole, Marc
30 May	Chinese water-color	Shengsheng
6 June	„The human in nature". What is the power of Chinese and Japanese watercolors?	Luis Xiaofen
13 June	– National holiday –	
20 June	„The moving image". How did early animators do their work? How do current algorithms create animated movement?	Minqian
	„Color systems". A bit of history. How do HSV and RGB relate? How to transfer between them? Newton and Goethe – who is right?	Gelin Zhou

27 June	„Portraiture". A selection of old and new renditions of the human	Alexander
	„Trees in nature, art, and computing"	Geeta
4 July	„Fractals: A mathematical source of visual images"	Xenia
	„Clouds in nature, art, and computing"	Alex
	„(Photo-)Realism". What is realistic? What is realistic in photorealistic rendering?	Philipp
11 July	A short comment by each participant about an observation on digital images, something that comes to your mind. Summary and concluding discussion. Critique	
18 July	Deadline for submission of your written essays. Send as pdf!	