Coursework commentary 2018–2019

CO3346 Sound and music

Coursework assignment 1

General remarks

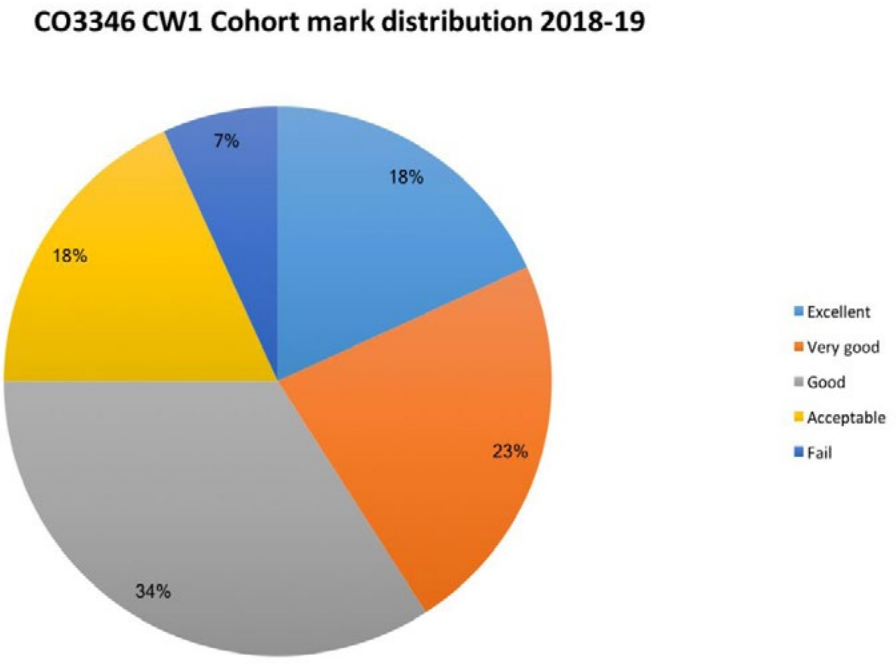
This course is one that is structured on a topic basis through the subject guide. The coursework assignments this year were designed to allow students to explore the concept of computational creativity, particularly within the context of sound and music.

The first coursework assignment involved exploring background material in the area of computational creativity, in a rigorously sound academic way; the second coursework assignment took this theoretical and academic foundation and required the development and then critique of a creative artefact based on the background work done in the first assignment.

At Level 6, examiners expect a higher quality response to questions, as this is the final level of the degree programme. Students are also expected to perform more independent work in order to achieve the requirements of the assignments. This includes being able to submit reports and essays of high quality, to develop artefacts that show creativity, and to appropriately critique and evaluate their own and others' work. This year, there were a handful of excellent submissions in both coursework assignments, and in addition, the examiners were pleased to note a much smaller number of incidences of poor academic practice. However, many of the written submissions did not really provide anything beyond a simple summary of the various sources used; students should consider this to be a part of good academic writing, where value is added beyond just repeating what has been read.

This year, examiners were also pleased to note that the required submission format was well adhered to.

See the 2018–2019 CW1 cohort mark distribution below:



Comments on specific questions

Computational creativity and academic investigation

For this coursework assignment, students were required to investigate the general area of computational creativity, answering some specific questions on the topic. This was then narrowed down to looking at music and sound. Finally, students had to choose one of three papers in the area to read, fully understand, and answer particular questions about the chosen paper. Only a couple of very weak submissions received a fail grade, while about 20 per cent of the cohort obtained a First, with a similar number in the Upper Second range.

Part 1

This part was, in the main, attempted in a reasonable manner. There were some weaknesses, such as including a large degree of quoting in answers, and descriptions of computational creativity as being closer to artificial intelligence concepts than is fully correct. For section (b) many students, instead of identifying distinct areas within the field, simply gave examples of computational applications to creativity. For example, one student discussed data mining; another discussed recommender systems. In contrast, good responses identified areas such as games, art, storytelling, etc., and described the most important work in the areas identified.

Section (c) was the most weakly answered part of this question, with many students apparently not identifying some of the most important literature about criteria for evaluating computational creativity. Some answers focused on creativity, to the exclusion of anything computational, while others failed to mention work by Ritchie and work by Jordanous. A few students gave only the example of the Turing Test as their discussion of computational creativity. However, the Turing Test is not about creativity, nor is it a strong example of a criterion.

Section (d) was mainly answered well, though a small handful of students confused citation with citation index, and explained why citation is important. Unfortunately, though correct, this did not answer the question asked and so did not gain marks.

Part 2

This part was omitted by about 10 per cent of students, and a further 10 per cent provided very weak answers. Such answers suffered from omissions such as not including three papers, or explanations of what the papers were actually about. Also, of most gravity was the omission of any description of why the paper was essential to understanding about computational creativity in sound and music.

There were however some very good responses, and a few that scored a full 10 out of the available marks. A few students related their choices to the citation index concepts they had already discussed in the previous answer, and others provided very clear summaries of the papers chosen. The best responses also supplied a range of papers that covered different fundamental topics in the area, rather than three papers that were all about a very similar but smaller aspect within musical computational creativity.

It is important to appreciate the value of both older – but classic – work, and also more recent publications. Some students only included very new work, thereby omitting the original theoretical basis from this area, while others focused on old work, which has sometimes been superseded. Mature reading will be able to demonstrate the place of each.

Part 3

The final part was made up of a number of short questions, and most students performed reasonably on the earlier ones. However, a large number omitted to actually say which paper they had chosen to read; this was not explicitly asked for, but it would have been reasonable to assume that this would be useful information for the examiners.

About half of the students chose to examine the Haenen and Rauchas paper, with nearly the same amount choosing the paper by McLean and Wiggins. Only a couple of students investigated the paper by Wiggins and Forth.

In general, the first few questions were answered reasonably well. Students struggled when they got to section (e), which asked about research or experimental procedure. Some students thought that this related to the way that the paper was written, rather than discussing the actual research procedure or process used. In the case of the McLean and Wiggins paper, many students did correctly note that a survey formed the main part of the research, while in the Haenen and Rauchas paper, more detailed explanations of the generation of melodies were given, as well as the comparison of these with well-known melodies using a Turing Test and the Ritchie criteria for evaluating computational creativity. Weaker responses described only the melody generation process as the entire experimental procedure, and omitted the evaluation and analysis from this. The following section, which was about results, was again generally answered well, as was the section on conclusions, although quite a few students confused and conflated the two.

Students seemed to struggle again with the final three questions, sometimes not seeming to understand them, and sometimes providing answers that did not relate to the questions themselves. Many students misinterpreted section (h), and wrote about parts of the paper that they felt were missing. For example, one student said of the paper investigating live coding (McLean and Wiggins) that an unanswered question was 'what is the difference between live coding a piece of music and composing it in the sequencer'. While this may well be something one would want to know, it is not a question that was left unanswered by the particular research described in the paper. There were other examples. In contrast, another student said that: *'From the results that were extracted from responses from the live coders, it became apparent that they were already experiencing at minimum, weak computational creativity within their creative process but this was never elaborated upon. This was an unanswered question that could have been a key learning point for future development and research since the live coders could have given deep insight into the current enhancements and drawbacks of such systems'*, showing insight and understanding into the research process.

Other good points were made. About the McLean and Wiggins paper, one student pointed out that the approach does not factor in a potential to distinguish weak computational creativity from weak live coding ability; while another felt that the survey community was live coders only, and hence the possibility of bias could have been introduced. They suggested a more diverse community than only the TOPLAP one, or even respondents who were not live coders at all. A final comment, validly made, was that the link to the survey results given in the paper no longer works, pointing out the risks of this sort of Internet reliance.

Regarding the Haenen and Rauchas paper, many students identified the small sample size and the shortness of the melodies generated as weaknesses, saying that the authors had mentioned these themselves, but then went on to describe how these aspects could be improved in further work. They correctly pointed out that with such a small sample, there is no possibility of

any statistical significance in the results. One student focussed on the fact that only the outputs were evaluated with regard to creativity, and suggested that focussing on the creative process itself could bring more light. Other suggestions were about doing a similar experiment in another creative form, and comparing these two kinds of artefact. A few students mentioned work published by Kat Agres et al. in 2015 as valid follow-on work which might contradict assumptions made.

Students are strongly encouraged to look at examples of good coursework assignments that are published on the VLE. While not all of these will be perfect, they are a good indicator of the kind of work that examiners are expecting from students, and also demonstrate that you don't have to answer a question in exactly the way that the examiner may be imagining an answer, as long as what you say is reasonable, correct, and well-justified, and answers the question asked.

Coursework commentary 2018–2019

CO3346 Sound and music

Coursework assignment 2

General remarks

This course is one that is structured on a topic basis through the subject guide. The coursework assignments this year were designed to allow students to explore the concept of computational creativity, particularly within the context of sound and music.

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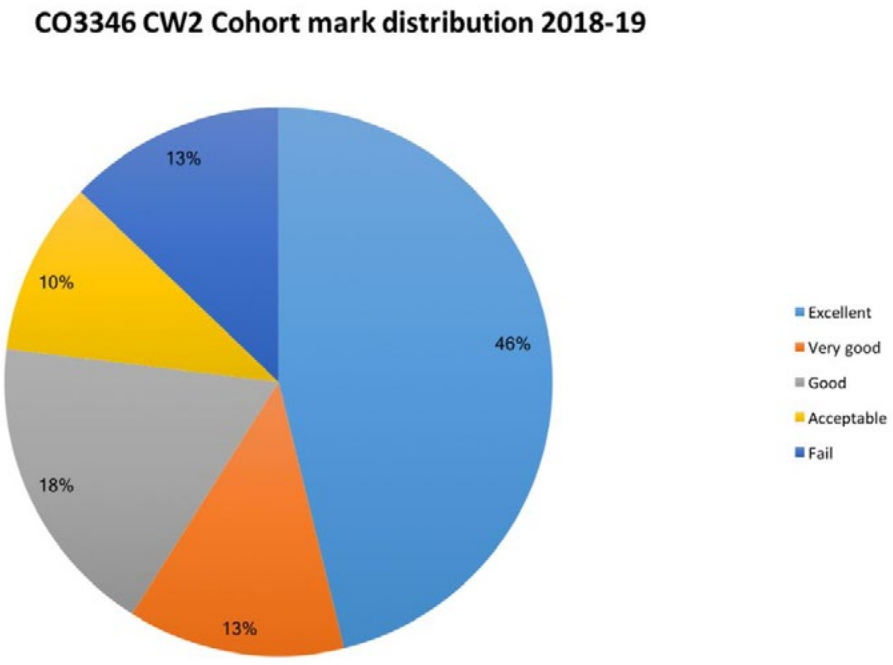
At Level 6, examiners expect a higher quality response to questions, as this is the final level of the degree programme. Students are also expected to perform more independent work in order to achieve the requirements of the assignments. This includes being able to submit reports and essays of high quality, to develop artefacts that show creativity, and to appropriately critique and evaluate their own and others' work. This year, there were a handful of excellent submissions in both coursework assignments, and in addition, the examiners were pleased to note a much smaller number of incidences of poor academic practice. However, many of the written submissions did not really provide anything beyond a simple summary of the various sources used; students should consider this to be a part of good academic writing, where value is added beyond just repeating what has been read.

This year, examiners were also pleased to note that the required submission format was well adhered to.

See the 2018–2019 CW2 cohort mark distribution below:



Comments on specific questions

Concrete exploration

At Level 6, in the Creative Computing degree, we expect students to be able to develop a brief; and to respond to a brief. Additionally, students should be able to critically evaluate their own and others' work. This coursework required a brief development in the form of a description of motivation for a sketch in the context of computational creativity. A second written part of the submission was a critical evaluation of the sketch developed from the initial brief.

Unfortunately, there were two blank submissions, which obtained no marks, and also a few very weak submissions which did not include any implementation, hence attracting low marks. One of the submissions that did not include Parts 2 and 3 was strong in Part 1, so the examiners were disappointed that this student did not submit work for these parts. All of the other submissions obtained at least a pass mark, and there were over 40 per cent of submissions that obtained a First.

Most students were able to provide a reasonable brief, though some of the weaker submissions did not distinguish appropriately between the brief (Part 1 of the coursework description), and the development (Part 2). One way that might be helpful to think about this is that the brief should be something that could be passed on to a developer to implement, and it needs to be detailed enough to allow this to be done; however, actual implementation is not part of the brief unless there are specific aspects that are essential to the creative part of the work. In the case of this assignment, as is true for many in the creative computing course, the person creating the brief, and the person doing the development, are actually the same person. However, this does not mean that it is appropriate to conflate the two, which many students unfortunately did.

Many students did attempt to relate the brief they designed to the work of coursework assignment 1. A large number chose to implement an artificial neural network (ANN), basing this decision on the paper by Haenen and Rauchas which includes some ANN work. While this choice was perhaps an appropriate one, only a few students clearly justified the connection any further than simply mentioning it.

The main sketch development, for Part 2, saw a number of strong creative developments. Some examples include a data musicalisation (with the idea that the primary aim of musicalisation is to produce a musical experience); a linking of Gestalt principles to music visualisation; a music visualiser based on sampling and FFTs; work that included the incorporation of deep dream concepts into the artefact; and composing sound using images as the basis for this.

One answer spent a lot of time making use of the Pure Data system, and described their experience with this well. The insights gained were also well described. However, this was only very weakly linked to and motivated by the work of coursework assignment 1, and so this did not attract high marks. It is very important to adhere to the requirements of the coursework. Examiners also noted that a large number of students chose to develop implementations to generate small parts of nursery rhymes, which showed less creative initiative.

In general, the critical evaluations were done reasonably well, though sometimes students showed a lack of insight about the creative worth of their work. While not all pieces of work produced will always show large amounts of innovation or unique creativity, having a sense of the extent of this in an artefact you have developed is important.

Finally, it is always useful to include at least some sample outputs when possible; not all students did this. Seeing the submission as a way for you to communicate with the examiners about your own understanding, the process you took, and what you have achieved, is a helpful stance; and some outputs can often highlight the latter. However, simply submitting outputs as part of the zip file, with no discussion of them, may show a lack of understanding. It is equally important that you comment on the particular outputs you've included, and what you feel they demonstrate.

Again, we encourage you to look at successful submissions, to obtain an idea of the different approaches to coursework assignments, all of which show some strong aspects.