

Fraud, Plagiarism & Basic Machine Learning  
Version: Tue 25<sup>th</sup> Sept, 2018 at 13:58.

## Introduction

This note gives a short introduction into what fraud, especially plagiarism, is and how we (the instructors of the Basic Machine Learningcourse) and the Examination committee deals with it.

One important type of fraud is plagiarism: using someone else's work or your own work without a proper citation. What counts as plagiarism is defined in the students' charter 2016-2017, p. 22/23:2, Academic misconduct and fraud.

More information can also be found on the website of the EEMCS examination board.

Please read this section carefully.

## Plagiarism<sup>1</sup>

Plagiarism includes, but is not limited to:

- Using (parts of) other people's work (original terms, ideas, results or conclusions, illustrations) and presenting this as ones own work; if parts of another text (printed or digital) are used without attribution (and even if small changes are made), plagiarism has occurred,
- Using visual or audio material, test results, designs, software and program codes without attribution and thereby presenting this as ones own original work,
- Using verbatim citations without attribution or a clear indication (by, for example, omitting quotation marks, indentation, leaving white space) and thereby creating the false impression that (part of) these citations are ones own original work,
- Citing literature that one has not read oneself (for example, using references taken from somebody elses work),
- Using texts that have been written in collaboration with others without explicitly mentioning this,
- Submitting work that has already been published in whole or in part elsewhere (e.g. work from other courses or educational programmes), without reference to the original work (selfplagiarism),
- "Free-riding"; i.e. not contributing equally to a group assignment.

## Possible consequences

What happens if you are suspected of fraud is explained in Article 2.5 of the Rules and Guidelines of the EEMCS examination board.

Article 2.5.2: If fraud is suspected, the examiner or examination supervisor will inform the student that this will be reported to the Examination Board. The report by the examiner or examination supervisor will suspend the determination of the assessment of the test for the period running until the time that the Examination Board determines whether fraud occurred or not.

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<sup>1</sup>Most of the text is taken from the Manual of the Smart Tech module

Article 2.5.3: After having given the student and teacher an opportunity to be heard, the Examination Board will determine whether it was fraud and which measures will be taken, and will inform the student and teacher of this in writing.

Article 2.5.4: If fraud is found, the test/interim examination will in any event be declared invalid and the Examination Board may deprive the student of the right to sit one or more tests or interim or other examinations to be designated by the Examination Board for a period to be set by the Examination Board (at most one year).

## Example scenario's

Please be aware of the consequences of fraud as discussed in the Rules and Guidelines of the EEMCS examination board. The boundaries are not always clear, so here we show a few borderline scenarios <sup>2</sup>. When it comes down to handing in assignments of this module, every year there are students who do not understand the borderline between, on the one hand, cooperating and discussing solutions between groups or individuals (which is allowed), and on the other, copying or sharing solutions (which is forbidden and counted as fraudulent behaviour). Here are some scenarios which may help in making this distinction.

Scenario 1 Peter and Lisa are quite comfortable with programming or Machine Learning and have pretty much finished the assignment. Mark and Wouter, on the other hand, are struggling and ask Lisa how she has solved it. Lisa, a friendly girl, shows her solution and takes them through it line by line. Mark and Wouter now understand what to do and go off to create their own Machine Learning solution, based on what they saw. Is this allowed or not?

**Verdict.** No problem here, everything is in the green. It is perfectly fine and allowed for Lisa to explain her solution, even very thoroughly. The important point is that in implementing it themselves and testing their own solution, Mark and Wouter are still forced to think about what is happening and will gain the required understanding, though probably they will not get as much out of it as Lisa (explaining stuff to others is about the best possible way to learn it better yourself!)

Scenario 2 The start is as in the previous case. However, while Mark and Wouter implement their own solution, inspired by that of Lisa, some error crops up which they do not understand. Lisa has left by now; after they mail her, still trying to be helpful she sends them her solution for them to inspect. They inspect it so closely that in the end their solution is indistinguishable from Peter and Lisas, except for the choice of some variable names and the comments they added themselves. Is this allowed or not?

**Verdict.** This is now a case of fraud. All three are at fault: Lisa for enabling fraud by sending her files (even if it was meant as a friendly gesture) and Mark and Wouter for copying the solution. Peter was not involved, developed his own solution (together with Lisa) and is innocent.

Scenario 3 Alexandra and Nahuel are not finished, and the deadline is very close. The same holds for Simon and Jaco. On the Friday night train home, Jaco and Nahuel meet and during the 2- hour train ride work it out together. They type in the same solution and hand it in on behalf of their groups. Is this allowed or not?

**Verdict.** This is also a case of fraud. Actually there are two problems here. The

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<sup>2</sup>This section has been reproduced from the module manual of M1 TCS, wk2, by Arend Rensink

first is that both Nahuel and Jaco handed in a solution on behalf of their groups that had been developed by them alone, without their partners. This is unwise and against the spirit of the assignment (Alexandra and Simon also need to master this stuff!) but essentially undetectable and not fraudulent. The second problem is that the solution was developed, and shared, in collaboration between two groups; this is definitely forbidden. All four students are culpable; Alexandra and Simon cannot hide behind the fact that they did not partake in the collaboration, as they were apparently happy enough to have their name on the solutions and pretend they worked on it, too.

Note that we are not on a witch-hunt here: let us stress again that cooperating and discussing assignments is OK, even encouraged; it is at the point where you start copying or duplicating pieces of a solution or code that you cross the border.