Graduate Student Ethics: What and Why?

A Guide for Computer Science Students

January 26, 2004

Ethics

Ethics provide guidelines for the behavior of every civilized group. Ethics are not absolute—for instance, they do not postulate rigid notions of good and evil. Nor are they equivalent to morality: moral principles are specific to a person and hold for that person in any environment, whereas ethics are attached to a group and tend to be specific to an environment. (You can view a type of hierarchy, with religion at the top, morality next, ethics after that, and etiquette—a set of principles designed to facilitate interactions among people—below that.) Ethics are most commonly founded upon a utilitarian view: principles whose general and long-term observance tends to facilitate the achievement of the group's goals are by definition ethical. Since the notion of group is vague, the ethics of large groups (an entire nation, for instance) can differ considerably from the ethics of a smaller group (say, a family).

Ethical Principles in a University

Fortunately, we all agree on the goals of academic institution: the dissemination and creation of knowledge. Similarly, the goals of graduate study are clear: learning. Academic ethics are thus primarily defined by what facilitates the learning, dissemination, and creation of knowledge. Because most universities also assign grades, faculty write recommendations, and students (and faculty) produce scholarly work for publication, all of which affect your immediate job prospects, a secondary ethical motivation is fair assignment of credit for the learning and the work. (In other words, universities and programs of study have a dual function: one related to knowledge and another related to the evaluation of its members; in this respect, of course, they are not that different from other places of work, where employees are expected to grow on the job and are also regularly evaluated by their supervisors.)

While this secondary motivation is less important on an individual basis, it is just as important on a societal basis: not learning usually only hurts yourself (but see below for more harmful conduct), but preventing a fair assignment of credit hurts your peers as well, both by distorting the assignment of credit and by causing problems of morale. Thus, while the primary principle—to learn, teach, and research—must govern all academic ethics, the second is just as important because contravening it can cause much larger damage.

We can assimilate the second principle with the notion of academic honesty: academic dishonesty covers most activities that prevent a fair assignment of credit for learning and work. Acts of academic dishonesty can be committed by students, by teaching assistants,

by instructors, and by administrators. Always keep in mind that dishonesty may harm your peers as much as, or even more, than yourself.

Pertinent UNM Documents

You must read the Appendix of the Pathfinder (aka Student Handbook)—it includes all relevant policies, either in full or as pointers to other sources. It is available on the web at `www.unm.edu/~sac/policies.html`. You are *directly and personally responsible* for knowing and following the policies described in the Pathfinder. Take particular note of the Students' Code of Conduct, which lists the areas of conduct regulated by the university (one of which is academic honesty)—this code can be found at `www.unm.edu/~sac/policies.html#studentcofc` and contains a list of topics that goes well beyond academic honesty (including sexual conduct, freedom of expression, personal behavior, use of computing resources, etc.).

You should also look at relevant sections of the Regents' Policy Manual, which governs the whole university, `www.unm.edu/~brpm/`, and of the Faculty Handbook, which governs the faculty, TAs, and RAs, `www.unm.edu/~handbook/`.

Finally, here is the official wording of the UNM Policy on Academic Dishonesty for students, at `www.unm.edu/~sac/policies.html#pad`:

> *Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, up to and including dismissal, against any student who is found guilty of academic dishonesty or otherwise fails to meet the standards. Any student judged to have engaged in academic dishonesty in course work may receive a reduced or failing grade for the work in question and/or for the course. Academic dishonesty includes, but is not limited to, dishonesty in quizzes, tests, or assignments; claiming credit for work not done or done by others; hindering the academic work of other students; misrepresenting academic or professional qualifications within or without the University; and nondisclosure or misrepresentation in filling out applications or other University records.*

Do's and Don't's

- Plagiarism (copying someone else's work and attempting to pass it off as one's own work) contravenes both governing principles: it does nothing to help learning and it prevents fair assignment of credit for work done. It does not matter whether you are copying verbatim or using your own words (although the latter is better, since it may at least lead you to some understanding of the work and thus lessen the offense against the first principle): if you use someone else's work, you must

attribute it. Plagiarism takes many forms, so additional items below illustrate some specific aspects of plagiarism.

- Hiring someone (e.g., over the web) to write an essay or take a test for you is clearly unethical, as it violates both principles: you do not learn anything and credit assignment is distorted. (Even though you paid for the work and thus own it—in the sense of owning "work for hire," something done everyday by a university administration or a business or a celebrity with a ghostwriter—you did not learn anything about the subject in the process nor can you claim credit for the work.)

  Even if you take the writeup you purchased, study it, make sure you understand it, and then write your own essay, you are still in breach of ethics: while you are no longer contravening the first principle (or at least not as badly), you are still contravening the second: you might not have been able to write this essay without the bought help and so you may get more credit that you really earned. Finally, of course, it does not matter whether you had to pay for the writeup or got it for free from a friend who wanted to help you (some help!—see below for that friend's ethical position).

- Using work without proper attribution (e.g., inserting paragraphs excerpted from other work without quoting that other work) is also a form of plagiarism, It contravenes the second principle: it prevents a fair assignment of credit to the student, since the student appears to claim credit both for original parts of the work and for parts used without attribution.

  It is of course acceptable to use material from your textbooks and from lectures without attribution, nor do you have to give references for really common concepts—anything else would be tedious in the extreme—, but any outside materials used must be accompanied by a proper, *complete* citation: journal or conference or text, volume, year, publisher, pages, etc.; and if on-line, then a full web URL pointing directly to the document (with instructions if the document is internally structured without URLs), along with the date and time of last access (because such resources often vanish quickly). In particular, giving a Google search string (something done all too often!) is not an acceptable reference! (Also keep in mind that the instructor may have forbidden the use of external sources.)

- Even if you properly reference work you are using in your essay, you must be careful not to plagiarize the *expression* used by your sources. It is also plagiarism (and a direct violation of copyright law) to use direct quotes without making it clear that they are quotes. In other words, plagiarism is not limited to the unattributed use of ideas or results, but also includes the unattributed use of specific expression.

  If your writing talents are poor and you admire the clarity of one of your sources, you should *quote* it, i.e., put the paragraph you are using within quotes marks or place it in a quote paragraph (with indented left and right margins—LaTeX has

the environment `\begin{quote}...\end{quote}` for that purpose) and introduce it with text like

> In their article [reference here], X and Y state:

followed by the quoted material. If you feel up to the task instead, describe what X and Y have done in your own words, with the proper reference to their work.

What must be quoted could be just a single word. If you state a definition for some property that comes from another paper, you must attribute the definition: if I want to use the concept of "quizzical graph" and quizzical graphs were recently introduced at a conference, I cannot just write a definition for quizzical graphs, but must use an expression such as

> The following definition is excerpted from [reference]:

and then quote the definition. Thus a single word, here the word "quizzical" used in a particular context, may need to be both quoted and attributed.

If you want to modify the definition, on the other hand, say by introducing "completely quizzical graphs," you now need only reference the original definition of quizzical graphs, with language of the form

> We extend the concept of quizzical graphs, introduced by X and Y [reference], in the following way: a completely quizzical graph is ...

Finally, of course, common definitions, like common concepts, need not be quoted nor attributed: what I needed to do for the "quizzical graphs" need not be done for planar graphs. You would be seriously pedantic if you wrote in a research paper something like

> ... planar graphs, first introduced by Euler [reference], ...

referencing a centuries-old concept.

In case of doubt, however, choose the safe route and use quote and reference.

- Using work with proper attribution, but relying exclusively on such work rather than developing one's own solutions, contravenes the first principle, although not the second: students using this strategy for their homework hurt only themselves. It does not necessarily violate a policy on academic honesty (unless, of course, the use of outside sources was prohibited by the instructor), but it does make for poor work and a poor learning experience and thus remains unethical.

  One instance of that practice occurs in the context of assignments to write critical essays on something like a paper or a talk. Too often, what gets written is little more than a restatement (or an outright copy) of the abstract of the paper or talk. Not only does this not constitute a proper critique, it also did not prompt any learning on the part of the writer.

- Aiding a student who is taking a test definitely contravenes the second principle, but it may take many forms, from negligence to willful cheating, and may also be supported by the first principle—like mathematics, ethics cannot be completely consistent! Helping a fellow student understand a test question (but not solve it) or complete a homework may enhance that student's learning, which is consistent with the primary goal; but it may also distort the assignment of credit, contravening the second principle.

  Something as blatant as writing a friend's essay is clearly unethical; you are not being a very good friend, since, in doing so, you are depriving your friend from the chance to learn by doing. You are also harming all other students in your friend's class by artificially enhancing (we'll assume that you are writing a good essay!) your friend's work and thus distorting credit assignment in the class. Something as simple as not picking up a printout of draft answers, leaving some of your files world-readable, and other similar small indiscretions can tempt fellow students to cheat and constitute an indirect form of aiding and abetting in the cheating.

  Yet most instructors will expect, indeed encourage, you to form study groups, and many will encourage you to work in groups on homeworks and projects, because it is clear that groups can provide a better learning experience for many students. Hence, when it comes to collaborating on class material, on homework assignments, on class projects, etc., you should make sure that you have explicit guidelines from the instructor on what is and what is not acceptable in that class; it is the instructor's responsibility to give you such guidelines, so do not hesitate to ask for clarifications.

- Shirking your fair part of the load in a group project and yet receiving credit for the project violates both principles: you did not learn as much as you should have and received more credit than you deserved. This behavior is rarely covered by a university's policy on academic dishonesty—it is left to the instructor (and your teammates) to address the situation. So it behooves us all to take appropriate steps in such a case: if you cannot pull your load for unexpected reasons, inform your instructor and your teammates and otherwise just do your fair share.

- A common reprehensible behavior in some highly competitive premed programs is for a student to check out of the library every book on the topic of the next test, not so much in order to read these books (far too much to read), but to deny access to other students. (It is the library equivalent of a denial-of-service attack!) Such an action clearly violates the first principle, since it denies other students a proper learning environment. (Note that this case is directly addressed in the UNM Policy on Academic Dishonesty, where one example of academic dishonesty is "hindering the academic work of other students".)

- Trapping would-be cheaters by deliberately leaving lying around carefully constructed answers to a take-home test (wrong answers, but constructed for credibility

and verisimilitude) contravenes the second principle: by entrapping students into using wrong answers, it prevents a fair assignment of credit—the entrapped students of course cheated, but might have been able to produce better answers had they resisted the temptation. In this country, entrapment can be a legal offense even when committed by officers of the law.

- Claiming credit for work not done includes not just plagiarism, but publishing work without giving proper credit to coworkers—again violating the second principle. The standards of what constitute proper credit are somewhat discipline-specific, in terms of both how much work is required for acknowledgment and what form the acknowledgment takes (co-authorship, a footnote, a citation, etc.—this is more a form of etiquette than ethics), but the principle remains the same: within the purview of the conventions in use in the discipline, fair assignment of credit for work done must take place. Clearly, simple courtesy requires you to discuss a possible publication with your coworkers, which will go a long way toward resolving a proper attribution of credit for all involved.

  In Computer Science, authorship usually implies a substantial contribution to the paper; mere help to the authors (say in how to use a software package or in providing a data file) is usually acknowledged in a footnote or an acknowledgment section; authors are listed in alphabetical order unless one author is responsible for most of the work, in which case that author's name goes first. In many natural sciences, authorship comes with any level of contribution to the paper and the authors are listed in decreasing order of contribution to the paper; if the paper is the product of a lab effort, the lab director/senior faculty is usually listed last.

- Intellectual property (IP) is thoughts, ideas, works of art, mathematical formulas, production processes, etc. We constantly produce various forms of IP, so the legal code of every country addresses the issue of what constitutes legitimate IP, what are the rights in it, who owns those rights, and how those rights can be transferred. As its name indicates, IP is owned by one or more people and institutions, although such ownership can be relinquished by placing the IP in the "public domain". At UNM, by and large, scholarly and artistic work (e.g., research papers, monographs, textbooks, lecture notes, music scores, poems, sculptures, choreographies, etc.), typically protected by copyright, remain the property of their creators, but technological works ("inventions", processes, machinery, etc.), typically protectable by patents, are the sole property of the university, while software currently inhabits a gray zone (not being the property of the author, but still free to disseminate). As a creator of IP, you have rights in that IP, shared with your co-workers—read the UNM Intellectual Property Policy, at `www.unm.edu/~handbook/E70.html` to familiarize yourselves with those rights and responsibilities.

- In the case of legal concepts such as patents and copyrights, the assignment of credit is governed by federal law. You are unlikely to run into patents, but you will

run certainly into copyright issues. Copyright law protects ideas and expressions put into a "permanent" form (writing, code, etc.); it gives the copyright holder sole rights to reproduction, quoting, modification, etc. Unless explicitly authorized by the holder of copyright to do more, others are limited by the "Fair Use Doctrine," which allows limited copying of excerpts of a work for personal, non-commercial use on a time-limited basis. Thus, for instance, it is illegal to copy an entire work (such as a textbook or monograph), even when that work is out of print; it is illegal to copy year after year the same excerpt; it is illegal to make too many copies or to sell any of the copies, etc. For other details, see the UNM Intellectual Property Policy (found in the Faculty Handbook, but applicable to students as well), at `www.unm.edu/~handbook/E70.html`, but also seek advice from faculty, as many issues in copyright and patenting are rather complex.

- Research misconduct is addressed in the Faculty Handbook, but applies to students as well; see `www.unm.edu/~handbook/E40.html`. Here is the definition of research misconduct given in the handbook:

  > *"Research misconduct" is defined as fabrication, falsification or plagiarism in proposing, conducting, reporting or reviewing sponsored or unsponsored research. The misconduct must have been committed intentionally, knowingly or recklessly. Research misconduct is further defined to include gross carelessness in conducting research amounting to wanton disregard of truth or objectivity, or failure to comply or at least attempt to comply with material and relevant aspects of valid statutory or regulatory requirements governing the research in question. Research misconduct is more than a simple instance of an error in judgment, a misinterpretation of experimental results, an oversight in attribution, a disagreement with recognized authorities, a failure in either inductive or deductive reasoning, an error in planning or carrying out experiments, or a calculation mistake.*

  While research misconduct may contravene ethical principles beyond the two we have discussed (e.g., in unethical treatment of animal or human subjects), much of research misconduct once again has to do with its preventing fair assignment of credit and interfering with learning—this time the group that is harmed in the process is the entire scientific community. Research misconduct also includes misattribution, such as publishing work in which someone else has had a significant part and yet is not acknowledged.

Student Ethics and Faculty Ethics

Note that faculty are just as bound to the two principles as you are. You can and should expect every teacher to make genuine efforts at enhancing your learning and at fair as-

signment of credit; you should expect your research advisor to use proper attribution in publications and you have every right to protest unfair practices to the department chair or higher authority. As noted above, the research misconduct and intellectual property policies are primarily aimed at faculty, but apply to you as well—read them and make sure you understand your rights and responsibilities in these respects.

Summary

Gauge your actions against the two guiding principles: (i) your actions should promote enhanced dissemination and creation of knowledge and (ii) they should not hamper the fair assignment of credit to students and coworkers. If you are not sure how these principles apply in your situation, reread the relevant policies in the Pathfinder and the Faculty Handbook; if confusion persists, or in any ambiguous case, consult your advisor or the department chair. If you feel you have been a victim of unethical conduct by a fellow student or a faculty member, contact your advisor or the department chair or the chair of the graduate committee.