## Ethical issues and challenges in my own research - Assessment 1

When we talk about ethics in research, we address about implications of an experiment to the subjects of the analysis, humans or animals, and the anonymity of the collected data. Nevertheless, there are many other aspects of ethical behavior that are an integral part of any scientific activity. The integrity of researchers and truthfulness of the research results are essential for the progress of science. Every detail of the research process cannot be checked in the peer review process, and therefore the whole system of publishing results and developing knowledge strongly depends on the ethical principles of the research community. The engineering research community nurtures its own set of ethical standards that may be best stated in the IEEE code of ethics.

My research is in the area of wireless communication networks. I study possible optimization approaches for future heterogeneous systems. We design beamformers and allocate resources for Dynamic TDD based wireless network efficiently, to obtain better throughput and coverage and, more specifically, to improve the resource utilization. To assess the performance of novel solutions and propositions in the network architecture design, we apply different advanced mathematical tools. Most of my research results are presented with verified Matlab simulations, which anyone can reproduce using the same simulation environment.

I faced different ethical scenarios in the last few years as a researcher. One main problem was due to funding restrictions; most of the time, supervisors, project managers, and industrial people provide some comments that significantly affect your research progress. For example, I have been working towards one publication, and I manage to get all the relevant mathematical derivation and some results to justify my approach. However, I found it very difficult to match my research outcomes with project goals and themes. In that kind of scenario, the feedback is not constructive and somewhat challenging to achieve. That indeed discouraged me so many times while working towards the doctoral thesis. I expect them to think about the problem from the researcher’s point of view as the doctoral student’s main target is to get valid results for his thesis.

Another problem was that bad research manners and attitudes among colleagues and parallel researchers. I have been helping my colleagues with formulating their research problems and Matlab simulations for the sake of friendship. However, most of the cases, they don't continue to seek my help when they started to write papers. Hence, they don't include me in the author list. That is some gray area, even though my colleague has done all the hard work, and I have been helping him to have a smooth ride. Hence, I expect them to involve me in a later process as well with the approval of his/her supervisor.

Also, I have experienced some researchers do not add our papers to the reference list. I have personally read some research papers, which I believe that they might have referred to my papers but not included in the reference list. That is mainly to highlight their contribution during the review process. Hence, our articles do not get much attention in the research community due to fewer citations.

In project-based research groups, we present our solutions, and future ideas and targets are present every month. It is good to have these group meetings, develop our presentation skills, and to get positive feedback. However, In some cases, fellow researchers may grab our novel ideas and may apply to their topics. Also, industry people might publish new inventions reports based on our ideas and previously presented results. I have personally experienced my concepts have been applied by fellow group members for their research even without crediting me.

In my opinion, awareness of potential ethical dilemmas, as well as flexibility and openness in finding the right solutions, are the key to successful research. Respecting the standard practices but at the same time questioning them and discussing issues with the community is an excellent way to go when in any doubt.