You talkin' to me?

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Abstract
Advancing knowledge through robust research is an honourable aim- being scientific, finding the right methodology, executing project phases meticulously, and reporting on the outcomes as objectively and accurately as possible. But may I begin my inaugural editorial by saying that an even higher ideal to advancing knowledge is critiquing it as it happens. Reflective practice is not just something to be done by academics in their teaching; reflective practice is what we should all be doing as we go about undertaking our various day-to-day work tasks. For the engineer engaged in research and development, whether in industry or government, reflective practice means to analytically critique what they are doing and why they are doing it. The answers to these questions are not simple and often confronting, and beginning a dialogue with peers, superiors, and employers can be difficult if the mechanisms for open discourse are not espoused by one’s organisation.

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Advancing knowledge through robust research is an honourable aim—being scientific, finding the right methodology, executing project phases meticulously, and reporting on the outcomes as objectively and accurately as possible. But may I begin my inaugural editorial by saying that an even higher ideal to advancing knowledge is critiquing it as it happens. Reflective practice is not just something to be done by academics in their teaching—reflective practice is what we should all be doing as we go about undertaking our various day-to-day work tasks. For the engineer engaged in research and development, whether in industry or government, reflective practice means to analytically critique what they are doing and why they are doing it. The answers to these questions are not simple and often confronting, and beginning a dialogue with peers, superiors, and employers can be difficult if the mechanisms for open discourse are not espoused by one’s organisation.

Consider the biomedical engineer who combines knowledge of electronic, mechanical, chemical and materials-engineering, with the life sciences of medicine, biology and molecular biology. The aim of the engineer working in this space, and for that matter the aims of the discipline at large, are to support and enhance human life. Engineers working on devices to enhance human life should not only be thinking about how their breakthrough technologies might be used by those suffering with physical disabilities, but also how they might be applied in non-traditional areas. As engineers, we can often be preoccupied with producing a successful product or process innovation, more than thinking about what that product or process might actually mean. Devices for drug delivery, for instance, have manifold benefits for those suffering from diabetes and even for the elderly who take a great number of medicines on a daily basis. But such devices will also revolutionise the way that the drug addict will “shoot up” in the future, and might even lead to involuntary drug overdoses when human errors are inevitably made.

On the whole, we seem to be doing exceedingly well in making new discoveries, especially in the digital arena, and in bringing together once disparate disciplines to create radical breakthroughs. We are also making incremental innovations and improvements to designs, as our tools and techniques allow us to see views of our subject matter that were never before possible. But something that we have not done too well is to comprehend the bigger picture view of what all our discoveries, innovations, and radical breakthroughs will actually mean for society at large, and why we are being propelled this way or that when it comes to specific areas of research. Some may argue that the role of the engineer is simply to plan, design, and build, and that assessing the significance of a technology is better left to the end-users who either will see a use-value for that given product, or will not adopt it. The problem with this kind of engineering is that the created technique is left to run free. No doubt, this has certain advantages—a technology is put to good use wherever it is of value, even if engineers had a totally different conception of how it would be used before its release. On the flip side, as engineers we must be held accountable with respect to a device’s function and application. We should not simply be building because someone has given us the money to build; nor should we be building with the “build and they will come” mentality. This is to be narrow-sighted, to think of the “now” not later ideal, and to ignore the potential consequences.
Ethics is increasingly being talked about in the engineering discipline. It has become integral in engineering and computing curricula internationally. However, it remains to be seen how organisations and institutions will espouse ethics in their methodological processes.

Someone who has made particular progress in software engineering ethics is our previous editor-in-chief Professor Keith Miller. I would like to thank him personally for taking our Magazine to new heights during his four year editorship- we received a record number of international submissions during his leadership, and addressed engineering topics from multidisciplinary perspectives. I hope to carry on his legacy with the same spirit, inviting discussion on topical areas, including commentary by those who have become exceedingly influential in matters pertaining to technology and society.

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