Designing Software for the Present Moment
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Note

We often hear how digital technology is enabling access to knowledge, underpinning cutting edge research, reducing social inequality, and generally improving quality of life. For scholars and practitioners of religion, the Internet provides a wealth of scriptural resources, mindfulness apps help keep us focused, and social media enables congregations to keep in touch and share in religious observances. Yet despite all these benefits, many of us feel stressed as we grapple with a relentless succession of technological advances that intrude ever more deeply. It seems that to enjoy these boons we have to allow far-reaching and sometimes disturbing changes personally and collectively. What choice do we have?

Software isn't written at random: it is commissioned with specific purposes in mind and usually influenced by some profit motive. Commerce is baked in to the online ecosystem and frequently subjects us to the "attention economy," ostensibly to communicate information about products and services, but, arguably, more to dull awareness and foster addiction. The aim is for you to linger a few more seconds, until they dangle the next carrot, often in the form of some pseudo personal notification. Not wanting to miss out, you follow their lead and the whole process is perpetuated.

As we look on in weariness, we may hearken to Keats' sonnet on the sea and remove ourselves from the din. But those who most need simply to sit and observe have no time to find stillness. They simply can't switch off. Technology is progressing so fast that hardly anyone pauses for thought, to seriously consider: What are we getting ourselves into? The issues we face are serious and pervasive, a collective responsibility requiring deep and sustained deliberation by us all. In the headlong rush we are omitting consideration of the long-term effects. Intellectually, it is self-evident that well-being is not a product and that material possessions do not guarantee happiness, but our behaviour often betrays ignorance of these facts.

Religious and spiritual perspectives ought to provide distinct and valuable input into these conversations, with a breadth of scope reflecting the Seven Dimensions of Religion articulated by Ninian Smart (the seven dimensions are: *Ritual, Narrative & Mythic, Experiential and Emotional, Social & Institutional, Ethical & Legal, Doctrinal and Philosophical, Material*, https://www2.kenyon.edu/Depts/Religion/Fac/Suydam/Reln101/Sevendi.htm). Thus, my book, *Buddhism and Computing: How to Flourish in the Age of Algorithms*, draws especially on the ethical, experiential, and social dimensions, to give a steer on what constitutes well-being and human flourishing. It holds, for example, that whereas "optimal outcomes" in a secular world usually concern material acquisition, a religious perspective may point to a different mode of living, to the transcendent, with a path focused on developing the virtues of wisdom, compassion, and purity.

To apply these perspectives, we need to understand how we as humans have become enmeshed in a global matrix increasingly dependent on *algorithms*. These are sequences of instructions, like recipes, designed to carry out a computation or solve a particular problem. They are regarded as the "thinking" processes underlying software, which generate search engine results, match people on social networks, and so on. How they "think" is dependent on *design* (or *intention*), an issue that has preoccupied me since 2007 when I opened a Facebook account, only to

abandon it soon after when I realized that having one connection type meant a highly diluted notion of friendship. Mark Zuckerberg's design was for everyone to connect with everyone else, which might suit the heaven realms, but is impractical in the variegated human realm – as amply testified by the continued fallout over social media.

Whether a design aids or hinders human flourishing depends on architecture: just as a physical environment affects one's social development, so too an online environment affects one's cognitive and spiritual development. Whilst considering the architectures of online social networks, I revisited the Buddha's teachings to a householder named Sigāla. They concern the development of wholesome relationships, both kinship and non-kinship, and may be visualized via "six directions" (the compass points plus zenith and nadir). For instance, parents lie to the East and should be ministered to in ways that demonstrate respect, charity, and care. Applied to network design, this suggests separation of concerns, whereby making a connection requires mutual agreement on the relationship *type*. Communications can then be limited to the relevant people – hence colleagues you met only once don't accidentally have access to family photos.

We may also enhance cognitive support, so that users of social media are aware of what they are doing and why. To counter the mental debilitation in the "attention economy," we may deploy Harvard Thinking Routines from the field of education, to prompt the user to stop and reflect whenever they are about to make a connection or fill in their status box. Is this the right time? Do I have the right intentions?

This not only strengthens neural pathways, but exercises human agency, which should be of central concern in view of the rise of *artificial intelligence* (AI), the semblance of intelligence demonstrated by machines. AI uses sophisticated algorithms for reasoning, particularly *machine learning,* where the system's behaviour is modified by interactions with its environments, thereby exhibiting a kind of agency. This inevitably prompts questions as to what machines and humans respectively *can* and *should* be allowed to do.

In the Attakārī Sutta (the discourse on the self-doer), the Buddha expressed agency as an autonomous person exhibiting six characteristics: initiation, exertion, making effort, steadfastness, persistence, and endeavouring. So, whenever we are faced with a proposal for a new AI-based technology (such as assistance in medical diagnosis), we should consider: how does this impact on our autonomy, on our ability to initiate (set in motion), and keep striving? And do we really need what is being offered?

Despite its tragic nature, the pandemic has thrown a spiritual lifeline in reminding us of what is essential. We should work together to ensure that technology design meets essential religious and spiritual needs, to develop a voice for humanity that enables flourishing in the present moment and the moments to come.