

# Urban Landscapes

The beneficial use of surveillance and computer vision to achieve safer and more secure urban environments justifies the privacy risks. Discuss.

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## Abstract

The proposed essay title suggest a popular dichotomy contraposing security to privacy and imply a question asking whether the privacy risks given by computerized surveillance would be justified by an increased security or not.

## 1 Privacy vs Security

Are privacy and security a zero-sum game, as suggested in 2008 by the Director of National Intelligence, Michael McConnell [1]?

In my opinion, privacy and security are for sure related, but brutally contraposing one to the other may lead to misleading conclusions. I do not think that a weakened privacy for citizens would lead for sure to an increase of security for them and on the other side I do not think that increasing their privacy rights would necessarily lower their security. In other words, as supported by Jennifer Granick [2], I do not think the “equation” to be so simple.

Privacy is a quite recent concept, but I think it could be generalized as a kind of liberty, e.g. the liberty to do something without letting everybody (or someone) to know about it, and from this point of view we may discover that the problem is not recent at all. For example there is a famous quote by Benjamin Franklin dated 1775 saying:

They who can give up essential liberty to obtain a little temporary safety, deserve neither liberty nor safety.

I think this to be a quite interesting quote, expressing all the complexity of the problem, at a first read it seems to suggest not to give up liberty in change for safety, but then the words *essential*, *little* and *temporary* give

the feeling that the suggestion may not be so strong; it leaves the doubt that maybe some liberty could be gave up if they are not essential, or if the security in change could be “big” or not temporary.

## **2 Surveillance and computer vision technologies**

Computer vision technologies in the last years evolved rapidly hand in hand with their application to surveillance.

Our cities are densely populated by cameras, but, until some years ago, most of them where off-line and used mainly for local recording purposes against vandalism or theft and consequently their recordings where inspected by human operators (theoretically) only in case of a crime. This of course already posed privacy risks, that in some cases also realized in privacy laws infringements, but I think that in the next years those risks are going to increase and become more frightful.

Nowadays, computer vision and large scale data mining technologies helped by a pervasive network interconnection in conjunction with the presence of lot of surveillance cameras in urban environments poses risks on an higher level. What before requested an human operator intervention can now be done automatically, in a centralized fashion; e.g to automatically track the path of a person through a city using face recognition algorithms in conjunction to the information coming from surveillance cameras, is a completely plausible scenario.

A municipality’s cameras network could already be used in this way [3] and organizations promoting privacy rights are already trying to investigate and promote adequate countermeasures [4].

## **3 The privacy risks**

The risks related to the lack of privacy could be easily pointed out thinking about all the countries where human rights are not respected, or where some of them are not enforced enough. I would not go too much into details, but in a lot of countries a little lack of privacy that may cause the revealing of political thoughts, sexual preferences, religious belief, etc. could eventually lead also to a serious risk for life.

It is not so hard to think about how some of the government of those countries would use, for example, a pervasive urban network of cameras coupled with face detection and recognition system.

## **4 Beneficial use of technology to achieve security**

But why should someone wear a ridiculous hairstyle [4] to avoid his face to be detected if he or she lives in a “truly democratic” and human rights

respectful country and if is not a terrorist, a thief or has “nothing to hide”? If face recognition or whatever computer vision technology is used for a beneficial purpose, why should someone wouldn’t like to be detected and recognized?

Technically speaking there are no reasons at all, but fortunately (or unfortunately according to the point of view), we are not machines... or, more precisely, we are very complicated machines and our behaviors and needs are not what could be thought as to be the best, technically or rationally speaking [5].

Writing about these topics, books like *1984* [6] or *Brave new world* [7] comes easily to mind, the former is clearly an anti-utopia, a world in which nobody would live, in which almost everybody would feel that something is, also technically speaking, not working, but I think the latter to be more interesting in this context, also if less related to the privacy issue. The world described by Huxley is technically perfect, everything is working, every available technology is used for a “beneficial use”, but it is simply “weird”, I would not like to live there and most of the people I think would agree with me.

What I would like to point out is that, also thinking about a government (that hardly would ever exist) that would use computer vision only for a technically beneficial use, to increase citizens security, it would still be “weird” for citizens to know that their movements are tracked, that they are “observed”, that they are “recognized”, etc. I think that the reason for this can not be explained technically or rationally, it is simply due to the fact that we are humans, it is something more related to zoology and psychology.

## 5 Conclusion

I think privacy to be something related to our human nature, something we need a part from any rational reason, it is simply a need “hardcoded” in our brains.

A part from that, supposing to succeed to overcome the weird feeling about being controlled, giving up their privacy, citizens would eventually need to trust the government, or whatever institution retains information regarding them, to not use it to limit their liberties. But how could they be sure that also the more democratic government would not be tempted to use personal information regarding them against political adversaries or that an information leaks would never occur?

I think privacy to be a fundamental liberty and it should be one of the last liberty to be given up in change for security; in particular I think it to be so important, because without it would become very hard to maintain other fundamental liberties like the freedom of speech, association, religion, etc.

I am pretty confident that security can be achieved by other means, without limiting citizens privacy, or at least limiting it as few as possible.

Anyway, the computer vision research community, as all the other research communities, should obviously not stop their research because of a possible misuse of their results, but a discussion like the one stimulated by this proposed topic I think should be fundamental to augment a common awareness. Then the improvement of laws and regulations to enforce privacy rights should be encouraged inside the appropriate institutions.

## References

- [1] The spymaster, by Lawrence Wright, January 21st 2008, the New Yorker.
- [2] Security vs. Privacy: The Rematch, by Jennifer Granick, May 24th 2006, Wired.
- [3] Chicago's Video Surveillance Camera System: Growing and Unregulated, Feb 8 2011, ACLU Illinois Web Site.
- [4] <http://cvdazzle.com/>, Camouflage from Computer Vision, by Adam Harvey.
- [5] The naked ape: A zoologist's study of the human animal, by Desmond Morris, 1967.
- [6] 1984, by George Orwell, 1949.
- [7] Brave new world, by Aldous Huxley, 1932.