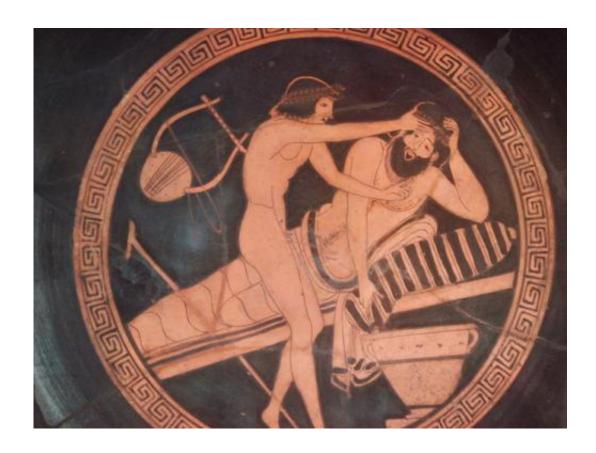


## Deep learning could prevent you from drunk posting to Facebook

December 12 2014, by Arosha K Bandara



"You think you're in pain now, but this is not going to look good on Facebook tomorrow." Credit: Stefano Bolognini/National Museum of Denmark

The immense popularity of social media seems to have redefined "privacy" from the sense of keeping information secret to being in control over how information is shared – among friends, colleagues, companies or the government. Perhaps it's no surprise then that the



world's largest social network, Facebook, has <u>announced</u> it's aim to develop algorithms that could protect us from ourselves and the danger of the "overshare".

The idea is that Facebook could warn, or prevent you, from unleashing an embarrassing picture or revelation when under the influence or having not thought through the consequences of the impact it could have – on family, friends, or the boss. This idea is not particularly new – there are mobile apps that try to prevent people from <u>drunk dialling or texting</u> on their phones, for example. One was even featured as the "killer app" developed by the protagonists in the Hollywood film <u>The Internship</u>.

## The danger of the drunk dial

The aim of these apps is to stop people from embarrassing themselves as a result of being too quick, too thoughtless, or – let's face it – too drunk to reflect on the potential consequences. But Facebook's project is different because it intends to use the <u>deep learning</u> form of artificial intelligence, rather than more simple measures such as the time taken between the last key stroke and hitting the send button, or the number of spelling errors made while typing the message.

Deep learning refers to a collection of artificial intelligence methods that try to build abstract relationships between concepts based on different representations of the data. For example, one application of deep-learning techniques might be include facial recognition, so that an individual can be identified across different photographs even when the lighting, the angle of the face in the picture, and the facial expression all vary. In fact Facebook, Apple and Google already offer this in their products as a means to quickly scan our digital photo library to help identify and tag our friends and family.

Deep learning is one of various machine learning techniques used by



<u>IBM's Watson</u> system that has already demonstrated it has the power to win the game show, Jeopardy!.

So Facebook's initial target appears aimed at extending its face recognition capability to automatically differentiate between a user's face when sober and drunk, and use this to get a user to think twice before hitting the post button. Of course being detected as being drunk in photographs won't be the only factor that determines when we want to moderate our <u>social media</u> sharing behaviours. The nature of the links we share, like and comment on can reveal a wealth of information about us, from ethnic and socio-economic background to political inclination and our sexuality. This makes the task for any <u>artificial intelligence</u> of managing our online <u>privacy</u> a challenging one.

## Staying in charge

A key challenge to help us manage our privacy more effectively will be to develop techniques that can analyse the data – photographs, their time and location, the people in them and how they appear, or the content of links – and correlate this to the privacy implications for the user given the privacy settings.

Our own research on <u>adaptive sharing in social networks</u> uses a quantitative model of privacy risk and social benefit to evaluate the effect of sharing any given piece of information with different members of the user's social network. Then it can provide recommendations for audiences to share with, or avoid.

Like Facebook's efforts, our work is to apply machine-learning techniques – which will one day include detecting drunkenness in photographs, or automatically determining the sensitivity of different information and calculating the potential regret factor of the post you're about to make. Far from being a flippant or fanciful use of technology,



these sorts of models will become a core part of the way we can engineer better privacy-awareness into the software we use.

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