

データサイエンス研究科 入試 サンプル問題 1
専門に関する筆記試験

問: 次の記事を読んで、今後期待される社会的ルールと技術的要素について述べよ。

A recently filed lawsuit against Tesla in the U.S. District Court of Northern California where Tesla is headquartered alleges that a Tesla Model X using Autopilot struck and killed a pedestrian, doing so on April 29, 2018.

This is reportedly the world's first pedestrian fatality associated with a Tesla while it was on Autopilot.

There have been other reported Autopilot-engaged fatalities that involved car drivers, and indeed corresponding lawsuits lodged at Tesla in some of those cases, but none as yet that seem to involve a pedestrian death.

Those that closely follow Tesla's efforts have already anticipated that the posture by Tesla will be to once again use the same defense as earlier employed, namely that the human driver that is behind the wheel of a Tesla is the captain of the ship and therefore ultimately bears full and indivisible responsibility for any car crashes, regardless of whether Autopilot was engaged or not during an incident.

Eliot, L.: "Tesla Lawsuit Over Autopilot-Engaged Pedestrian Death Could Disrupt Automated Driving Progress", Forbes, 2020. より抜粋

<https://www.forbes.com/sites/lanceeliot/2020/05/16/lawsuit-against-tesla-for-autopilot-engaged-pedestrian-death-could-disrupt-full-self-driving-progress/>

From Forbes. © 2020 Forbes. All rights reserved. Used under license.

データサイエンス研究科 入試 サンプル問題 2
専門に関する筆記試験

問: 下記の文章を読み、本文中に書かれている内容の技術的新規性を整理して述べ、今後の医学にどのように貢献するかを英語で述べよ。

Police searching for a long-lost person or fugitive sometimes have little more to go on than an old photograph. Artists or computer programs can attempt to predict what these individuals look like today, but both approaches have flaws. Now, scientists have harnessed advanced artificial intelligence (AI) to render artificial aging that's more realistic (and depressing) than ever. The system uses a two-part AI algorithm called a generative adversarial network (GAN). The first part takes a face and produces another face of the same individual at a target age. During training, a second part compares this image with a real image of someone at that age and with the original image and provides feedback, encouraging the first part to improve its abilities. Other artificial aging systems have used GANs, but this one differs by focusing not just on getting the age right, but also on maintaining the individual's identity. Unlike others, it also renders foreheads and (lack of) hair, as seen in the photos of Justin Timberlake and Kirsten Dunst above.

The researchers trained their AI on more than 100,000 images from two databases, including mugshots and celebrities at different ages. A separate computer program then judged how the AI performed on a novel set of images. When the AI aged photos of people more than 20 years, so that people under 30 were meant to look between 50 and 60, for example, the computer program saw them (on average) as a 60-year-old (for mugshots) or a 52-year-old (for celebs). This analysis was not performed on prior work, but human participants deciding whether the new results or images from prior attempts to age people looked most like a younger source image chose the new images 70% to 9%, the researchers report in a paper to be presented this month at the Conference on Computer Vision and Pattern Recognition in Salt Lake City.

Hutson, M.: "Artificial intelligence can predict how you'll look decades from now by Matthew Hutson, from Science, Jun 13, 2018. Reproduced with permission of the author.より抜粋

<https://www.sciencemag.org/news/2018/06/artificial-intelligence-can-predict-how-you-ll-look-decades-now>