

Contactless A.I. drowsiness detection system based on sensor fusion



Background



港聞

【城隧小巴奪命車禍・短片】乘客指司機疑「瞌眼瞓

2019年1月14日星期一





【城隧小巴奪命車禍・短片】乘客指 司機疑「瞌眼瞓」 死者兒:父轉駕 涉事路線「無幾耐」(12:11)





2019.01.14









【城隧小巴奪命車禍】死者兒:父轉駕涉事路線「無幾耐」

【大欖車禍】警方疑司機瞌眼瞓肇禍 專家批評貨櫃錯放 1018.01.04 車尾容易失控



警方消息懷疑司機恰眼瞓肇禍,有專家則質疑把短櫃置於長拖架尾部的做法並不恰當,易增加失控風險(張家豪攝)

- Every year in U.S.
 - > 100,000 reported crashes
 - > 70,000 injuries
 - > 1,500 fatalities

A.I. Drowsy Facial Feature Detection



- Drowsy-eye
- Drowsy-mouth
- Drowsy-face down
- Drowsy-nodding



System Overview



Speaker for voice alert

Embedded System



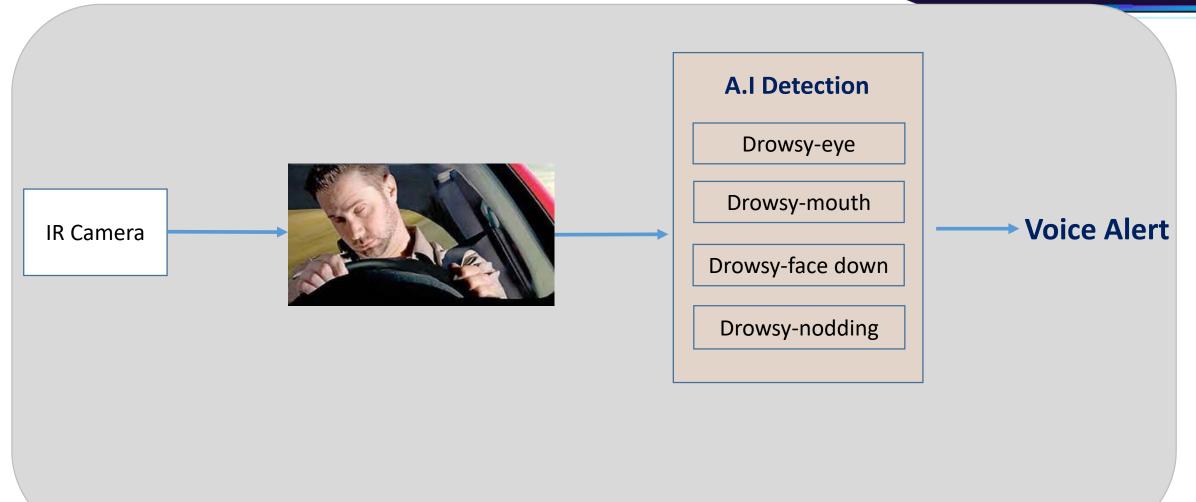
IR Camera

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System Overview





Demonstration



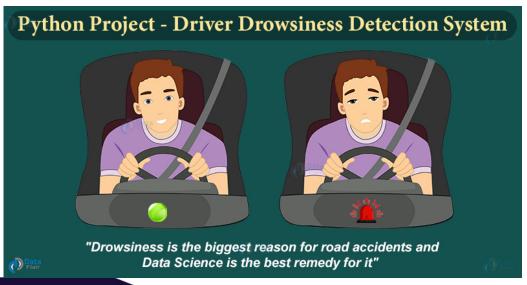


EYE

Key Features of the System



- Real time drowsiness detection, voice alert the driver when drowsiness detected to enhance driving safety
- Contactless detection algorithms (eyes motion, yawning, head movement)
- Low-cost
- Easy to install





CONTACTLESS ATTENDANCE SYSTEM



Other Potential Applications



Drowsiness detections for pilots/captain:

To monitor the drowsiness of the pilot and captain





Baby monitor:

- To recognise baby facial expressions
- Send a notice to the parent when the baby wakes up or crying

Further Discussion



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Thank you