COVID-19 THERMAL SCREENING

BY WHITEBOARD COORDINATOR

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A computer vision forward, deep learning technology provider for healthcare
In the setting of the COVID-19 pandemic there is an urgent need to:

1) Protect frontline staff from having direct contact with infected individuals during triage and screening.

2) Protect the community by quickly separating COVID-19 patients from the general patient population.

3) Protect COVID-19 patients by quickly and identifying them and initiating treatment.
Patients enter a healthcare facility and generally interact with one to two employees prior to having a temperature checked.

Staff enter their work environment and may never get screened.

Some facilities have employees staffing entrances and taking temperatures of all patients and staff – while this provides a quick understanding of who is febrile, it is costly to staff and harmful to the employees manning these entrances.
With the COVID-19 pandemic, there is an urgent need to identify febrile patients automatically at scale, and perhaps more critically, to protect caregiving staff from the threat of COVID-19 by maintaining physical distance between themselves and infected patients.

THE SOLUTION

THERMAL INFRARED CAMERAS TO PASSIVELY DETERMINE INDIVIDUALS WHO ARE FEBRILE
• Whiteboard can use any NVIDIA GPU.
  • Whiteboard prefers the RTX 2080Ti for its cost to performance ratio.
  • We have also run smaller models at the edge on the Jetson TX2’s.
  • When running the algorithms in the Azure Cloud, we use the Tesla V100 GPUs.

• Whiteboard uses NVIDIA GPUs in four ways.
  • Algorithm training with NVLinkled Tesla V100’s (all cloud based)
  • Inferencing (de-identification, human, head and face detection)
  • Video transcoding of H.264 streams
  • Edge detection
Product Details:

• Quick an easy installation (<60 mins per camera)

• An audible sound and visual signal from the monitor are activated. The temperature of the febrile person is displayed above their head.

• Notifications containing temperature and pictures of febrile individuals can be sent to phones, emails, or other media

• Our 640p resolution thermal cameras can detect, and measure temperatures (accuracy +/- 0.3 °C) on, up to 36 individuals per frame (@ up to 20fps) of video at 9 meters.
Our video feeds have been independently validated to be HIPAA Privacy Rule complaint.
Northwestern Memorial Hospital

• Active reduction of 4.4 clinical FTEs at hospital entrance. Staff redeployed for more value added clinical work.

• Fully passive, infinitely scalable screening of staff and patients for COVID-19
Opportunities for cameras post COVID pandemic:

• Ability to triage patients as they enter ED prior to seeing a clinical nurse

• Future ability to monitor pulse, oxygen saturation, and respiration rate

• Concealed weapons detection – at entrances that do not include metal detectors or security screening

• Patient tissue and organ perfusion monitoring post-operatively