PSCR 2021
THE DIGITAL EXPERIENCE
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ACE - A toolkit to simplify testing, development and prototyping of analytic technology

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#PSCR2021
ACE is an analytics tool kit
Why does public safety need an analytics toolkit?

- IOT – Internet of things
- Video Streams
- Big Data
- AI/Machine Learning
Why does public safety need an analytics toolkit?

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- IOT
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So, what is ACE?

Analytics Container Environment
Who could use ACE?

Street fight
A street fight detection algorithm could detect when a fight breaks out

Fire or smoke
A fire detection algorithm could detect and alert when a fire or smoke is detected

Medical emergency
A detection algorithm could detect a person collapsed on the ground
How does ACE work?

Input streams → Analytics → Filters

ACE UI:
- View original video stream
- Examine analytic output data streams
- Filtered data based on user-specified criteria for high-level awareness and triage
Additional ACE features

Confidence Intervals
Numeric representation of the confidence the algorithm has in the detections it makes. ACE color codes these to improve, at a glance, visibility to the user.

GPU enabled
ACE is GPU enabled, which provides exponential increases in processing power and efficiency.
New Features

GUI – Graphical user interface
Developed a user interface for configuring, deploying, and interacting with ACE analytics

Expanded API
Expanded the API to accommodate more types of analytics as well as integrated more open-source analytics into ACE
How to use ACE

1. Download and install ACE engine
2. Download and install ACE GUI
3. Add streams
4. Select analytics
5. Apply filters
10K+ Downloads
of custom CUDNN, TensorFlow, OpenCV containers we created for ACE
Future ACE

Deployment in live Public Safety environments

Increase scalability
We plan to increase the scalability of the environment by moving the back end to Kubernetes container orchestration system
Get ACE

https://github.com/usnistgov/ace

https://github.com/usnistgov/ace-ui

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If you have questions, look for our Q&A session!
THANK YOU

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