

MedRAS & MMSIV Team Up at the DARPA Triage Challenge

Representatives from TATRC's Medical Modeling, Simulation, Information and Visualization (MMSIV) team along with the Medical Robotics and Autonomous Systems (MedRAS) group participated in the DARPA Triage Challenge (DTC) Kickoff Meeting in November of 2023 that took place at the Defense Advanced Research Projects Agency (DARPA) conference center in Arlington, Virginia. The TATRC team attended this kickoff event as one of the independent verification and validation (IV&V) teams supporting the challenge effort, primarily with scenario design, simulation, and data collection support.

The DTC is an effort for participating challenge performing teams to develop novel solutions for the identification of physiological signatures that will help medical responders perform scalable, timely, and accurate triage in both civilian and military mass casualty events. The kickoff for this effort brought together the challenge performing teams, IV&V and support staff, and DARPA leadership for a 2-day event to discuss the initial plans for execution, including scenario design, scene layout, test and evaluation processes, timelines, broader ideas, and datasets for development.

At the kickoff event, MedRAS Lead, Mr. Nathan Fisher and MMSIV Lead, Dr. Ericka Stoor-Burning, presented an overview of TATRC's scenario design, simulation strategy, and data collection plans for the first year, and a general strategy for how these aspects of the challenge will evolve over the entire DTC effort. This presentation described the initial training dataset that the TATRC team collected leading up to the kickoff event. Team members Ms. Moriah Newman, Mr. Zach Lattimore, Mr. Wesley Huff, Mr. Ethan Quist, and Ms. Alix Gondringer also represented TATRC and hosted a simulation demonstration for all attendees to interact with during the meeting. This consisted of displaying high-fidelity manikins and discussing the



Unmanned Aerial System (UAS) was used to collect data during a demonstration at the DARPA Triage Challenge.

features that they could portray in both the training datasets and challenge events, and displaying examples of moulage or simulation props used on simulated live casualties. Additionally, TATRC also displayed example footage of the initial training dataset and the Unmanned Aerial System (UAS) used to collect the data, along with the physiological monitoring devices used to record and track the live actor ground truth vitals.

This kickoff event marks the official start of the three-year challenge effort for the performing teams which will consist of a workshop and a challenge event each year where the teams will test their prototype solutions live against predefined metrics. "While this event marks the starting line for the challenge performers, it marks a significant interim milestone for DARPA, TATRC, and the other IV&V teams," said Nathan Fisher. "The government team has worked hard to get to this point, and I think that showed at the event. It's been a privilege to be part of this dynamic and hard charging team."

The TATRC team will continue to support the DARPA and other IV&V teams throughout the DTC. If successful, this program will lead to new capabilities



A high-fidelity manikin was on display during the simulation demonstration.

for rapid medical triage and assessment in complex settings, including the development of physiological signatures from standoff sensors that will help medical responders deliver timely, appropriate care and optimize resource allocation in mass casualty events. This objective is well aligned with TATRC's new mission of fusing data, humans and machines into trustworthy solutions that optimize medical performance and casualty outcomes. ■■■

For more information on the DARPA Triage Challenge, please contact Mr. Nate Fisher at: nathan.t.fisher3.civ@health.mil.