

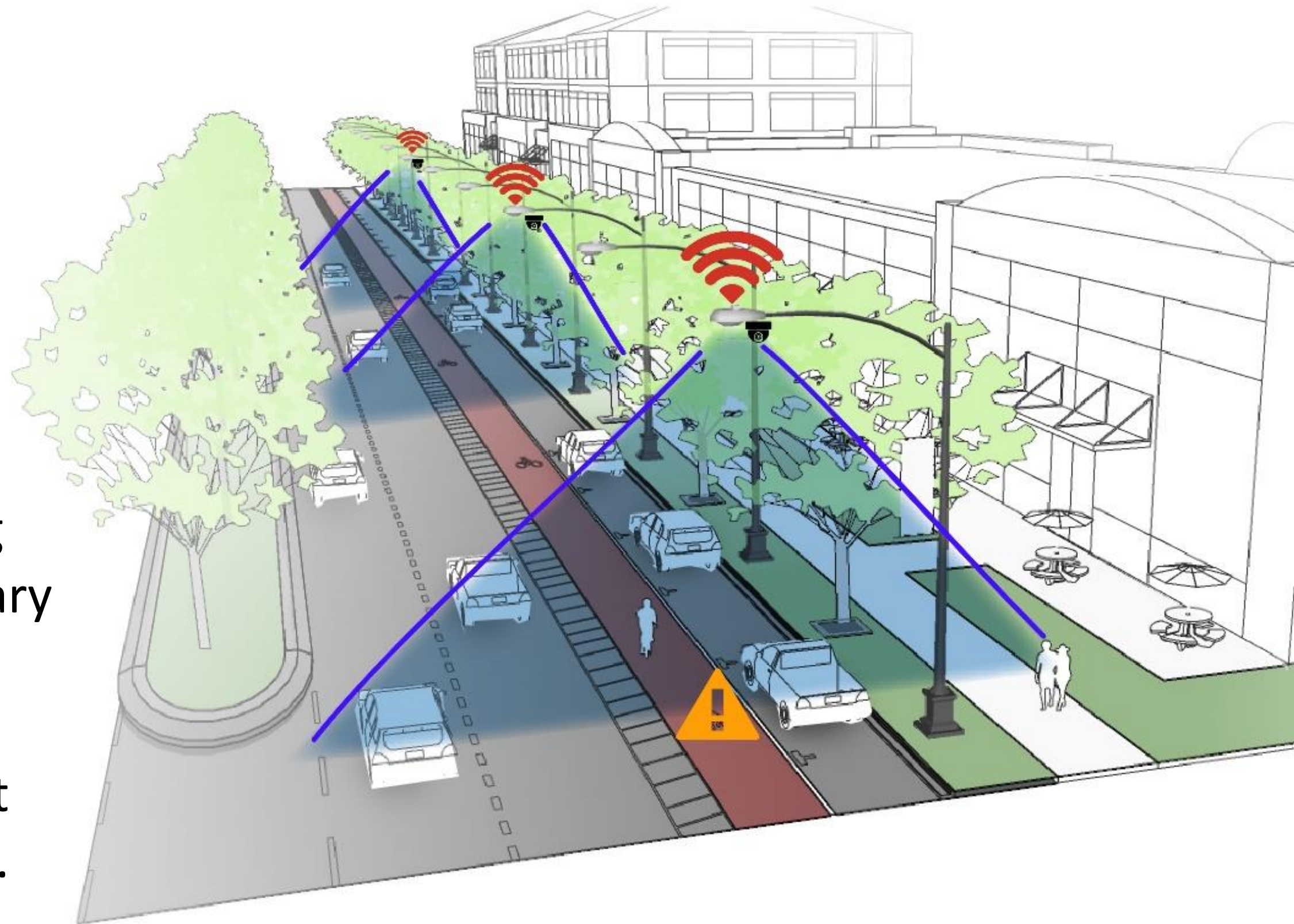
Building Safe and Secure Communities through Real-Time Edge Video Analytics

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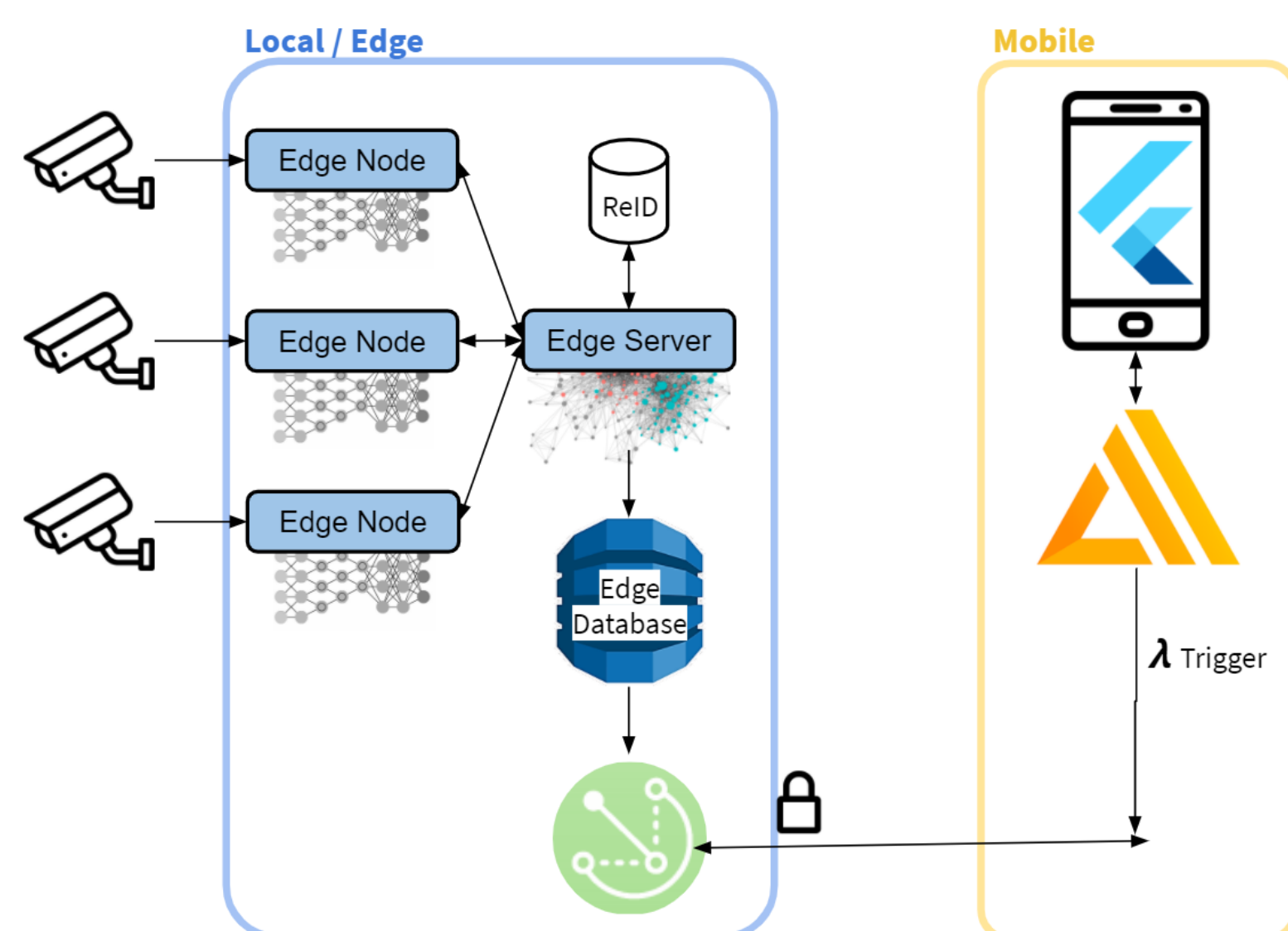
Problem Statement:

With the new wave of growth in urban areas, public safety plays an essential role in the development of smart communities. Law enforcement agencies are expected to continue to work toward crime reduction within a climate of budget restrictions and strained relationships across communities. For police departments across the country, there is an increasing demand for intelligent policing to help limit unnecessary police/citizen interactions and minimize the tension, while achieving a much higher temporal and spatial coverage in community environments and filtering out unnecessary calls, all while maintaining citizen privacy.



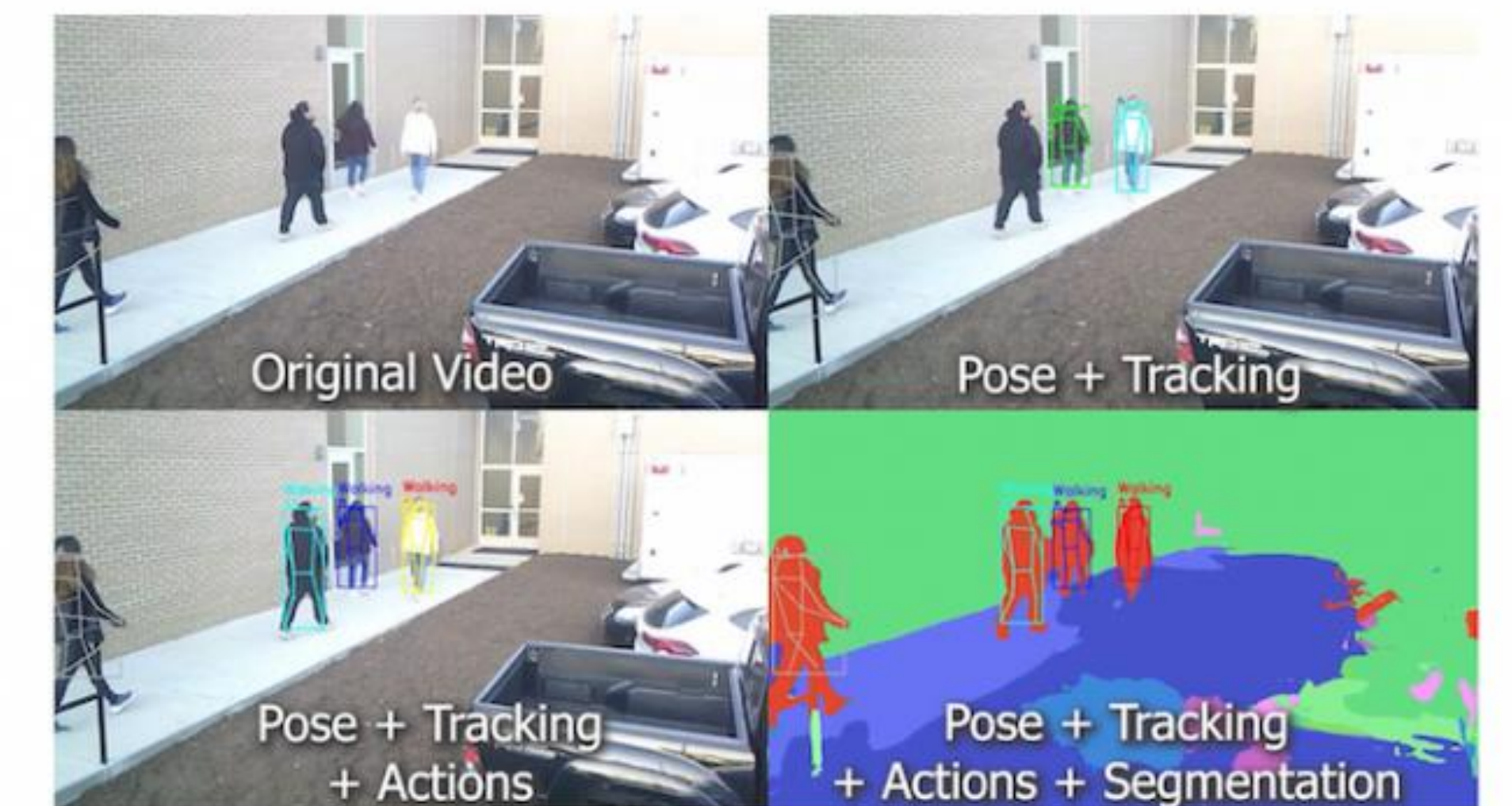
Intellectual Merits:

This project proposes a novel intelligent policing technology as a transformative and efficient solution to enhancing law enforcement. The proposed technology offers a network of smart cameras trained to generate alerts in real time. These cameras, which do not require continuous monitoring, identify behaviors without identifying individuals. Therefore, their use can mitigate false alarms, reduce biases and protect personal privacy. The technology will be co-designed and co-created with direct input from community residents, neighborhood leaders, the City of Charlotte and local law enforcement agencies.



Project Activities:

- **Algorithm:** First to develop fully functional end-to-end behavioral analysis without facial recognition or PII information
- **System:** Developed fully integrative IoT infrastructure with capability of real-time edge computing, independent from cloud
- **Data Collection:** Created a labeled dataset for public safety through close collaboration with CPCC criminal justice students and facilities
- **Demo and Engagement:** Created a mobile test beds and demoed technology at CMPD headquarter, and CPCC campus



Immediate Impact on Society

The immediate is the development of "Community Integrated Policing". The project offers early solutions to bring Artificial Intelligence to address public safety concerns while addressing privacy and transparency concerns. Co-creation with communities ensures community buy-in at all levels and will also benefit the law enforcement community as it can act as a force multiplier.

Sustainable Impact on Community

This project aims to bring law enforcement and communities together to design a technology solution that will offer wide data collection opportunities that maintain citizen privacy and, ultimately, lead to reduced crime, fewer unnecessary police-citizen interactions, and minimize tensions between law enforcement and communities.

Next Steps

- Enhancing the algorithm constructs for complex behavioral analysis and anomaly detection models, focusing on crimes in the parking lots
- Expanding the AI-powered real-time crime center lab at CPCC with campus-wide coverage across many cameras
- Continuation of our community engagement
- Continue the discussion with CMPD on the potential integration of proposed technology with their training campus at CPCC