NYC V2X & AI SYMPOSIUM

October 17-18, 2024

NYU Tandon School of Engineering
Pfizer Auditorium
Brooklyn, NY, 11201

Organized by

U.S. Department of Transportation Federal Highway Administration

New York State Department of Transportation

New York City DOT

Hosted by

NYU

C2SMART ER
CONNECTED COMMUNITIES WITH SMART MOBILITY TO EQUITABLY REDUCE CONGESTION

NYC V2X and AI Symposium

Thursday, October 17

8:00AM **Breakfast and Registration**

8:30AM **Welcome and Keynote Addresses**

Ydanis Rodriguez, Commissioner, NYC Department of Transportation (NYCDOT)
Robert R. Limoges, NY State Department of Transportation (NYSDOT)
Brian Cronin, USDOT ITS Joint Program Office
Timothy Drake, ITS America

9:50AM **Lessons Learned from Previous Connected Vehicle Deployments**

Jeffrey Bellone, USDOT Volpe Center, *USDOT CV Pilot Lessons Learned*
Deepak Gopalakrishna, ICF, *Mainstreaming Connectivity Lessons from WYDOT*
Mohamad Talas, NYCDOT, *NYC ITS Deployment, NYC CV Pilot Deployment, V2X Future Prospective*
Moderated by Sue Thomas, KLD Engineering, PC

11:10AM **Break**

11:30AM **AI Implementation in Transportation Systems**

Georges Aoude, Derq, Inc., *Safer Roads with AI-Powered Video Analytics: Safety Insights, Traffic Control, and V2X Applications*
Jim Misener, Qualcomm Technologies, Inc., *AI Implementation in Transp. Systems*
Satya Muthuswamy, KLD Engineering, PC, *AI Implementation in Transp. Systems*
Moderated by Kaan Ozbay, NYU C2SMARTER Center

1:00PM **Lunch**

1:40PM **V2X & AI Emerging Technologies, Funding, Standards, and Cybersecurity**

Ed Fok, USDOT/FHWA, *Scratching the Surface on V2X Cybersecurity*
Carl Puddy, Miovision Technologies, Inc., *AI Applications Multimodal Detection & Conflict Analysis*
Robert Rausch, TransCore, *Standards Supporting Incremental CV Infrastructure Deployment*
Govind Vadakpat, USDOT/FHWA, *USDOT National V2X Deployment Plan*
Moderated by Arthur T. O'Connor, USDOT/FHWA

3:00PM **Round Table: Open Discussion with Industry Experts**

Josh Benson, NYCDOT
Timothy Drake, ITS America
Ed Fok, USDOT/FHWA
Jim Misener, Qualcomm Technologies, Inc.
Carl Puddy, Miovision Technologies, Inc.
Evangelos Simoudis, Synapse Partners
Govind Vadakpat, USDOT/FHWA
Moderated by Steve Levine, TRANSCOM

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Friday, October 18

8:15AM **Breakfast**

8:45AM **Welcome**

9:00AM **Latest Advancements in Smart Cities**

Tim Johnson, T-Mobile, *Connected Solutions (aka IoT) for ITS- Overview*
Rob Holbrook, NYC Mayor's Office of Planning & Policy, *How NYC Moves:Tech-Accelerated Data Solutions for Transportation and Development Approvals in NYC*
Paul Rothman, NYC Office of Technology & Innovation, *NYC OTI Smart City Initiatives*
Evangelos Simoudis, Synapse Partners, *New Urban Mobility: Transformations & Value Creation*
Moderated by Adam Levine, New York Metropolitan Transportation Council

10:45AM **Break**

11:00AM **Research in V2X & AI Technologies and Applications**

Yongjie Fu, Columbia University, *Digital Twin for Pedestrian Safety Warning at a Single Urban Traffic Intersection*
Eugene Vinitsky, NYU C2SMARTER Center, *Fixing Evaluation of V2X Systems Using Reinforcement Learning*
Ruwen Qin, SUNY Stony Brook University, *Computational Intelligence for Enabling Vehicles' Visual Perception of Crash Risks*
Yiqiao Li, City College of NY, *AI-Enhanced Multimodal Traffic Monitoring System Leveraging Advanced Sensing Technologies*
Wenwen Zhang, Rutgers University, *Evaluating Pedestrian Stress through Biometric Sensing: Implications for V2X Technologies and Enhancing Urban Walking Experiences*
Moderated by Judith Peter, NYSDOT

12:45PM **Concluding Remarks**

Arthur T. O'Connor, USDOT/FHWA

1:00PM **Lunch**

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Speakers and Moderators

Ydanis Rodriguez was appointed Commissioner of the Department of Transportation in December 2021 by Mayor Eric Adams and began serving in the position on January 1, 2022. Previously, Commissioner Rodriguez served in the New York City Council, representing the 10th District that includes the neighborhoods of Washington Heights, Inwood, and Marble Hill.

Robert R. Limgoes, P.E., has been an engineer with the NYS Department of Transportation since 1992. Currently, he serves as the Director of the Office of Traffic Safety and Mobility. Additionally, he is the co-chair of the System Safety and Optimization Asset Management Team and the chair of Emergency Support Function1-Transportation at the state's Emergency Operations Center.

Brian Cronin. P.E., is the Program Director of the ITS Joint Program Office providing strategic direction for research and deployment. Prior to this role, Brian served as Director, Office of Safety and Operations Research and Development at FHWA for five years, and two years as the Director, Office of Operations Research and Development.

Timothy Drake, Esq., serves as ITS America's Senior Vice President for Public Policy and Government Affairs and is responsible for developing ITS America's policy positions on transportation and infrastructure issues including spectrum policy, automated and connected vehicles, digital infrastructure, artificial intelligence, sustainability, resiliency, and smart infrastructure.

Arthur T. O'Connor, Ph.D., P.E., has been with the USDOT/FHWA for approximately 37 years; he co-established the NYC Metropolitan Office in 1997 and has spent the past 28 years working closely with all downstate metropolitan partner agencies in the advancement of a wide range of ITS and operations programs and initiatives. He also spent five years as a Structural Engineer in private sector consultant and construction engineering firms with specialization in the nuclear power industry. He currently serves on the ITS-NY Board of Directors and as President Emeritus of ITS-NY.

Kaan Ozbay, Ph.D., is Director of the C2SMARTER Center and Professor in the Department of Civil and Urban Engineering and Center for Urban Science and Progress at NYU. Dr. Ozbay has published approximately 425 refereed papers in scholarly journals and conference proceedings. He serves as the Associate Editor of Networks and Spatial Economic journal and Transportmetrica B: Transportation Dynamics journal. He is a member of the editorial board of the ITS journal.

Mohamad Talas, Ph.D., P.E., PTOE, brings long-standing career experience in traffic engineering and operations and over 30 years experience at the New York City Department of Transportation. He currently serves as the Director for the NYCDOT System Engineering, ITS Projects Management, where he supervises the Intelligent Transportation System projects and initiatives in New York City.

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Deepak Gopalakrishna is a Vice President at ICF, a strategic consulting firm based in Washington, DC. He brings over 23 years of experience in Intelligent Transportation Systems planning and deployment. Gopalakrishna was the program management lead for the Wyoming CV Pilot across I-80. Mr. Gopalakrishna has a Masters in Civil Engineering from the Ohio State University.

Jeffrey Bellone is an economist in the Technology Innovation and Policy Division at the USDOT Volpe Center. Bellone's background in economics, data analysis, and systems engineering has led him to participate in projects ranging from evaluating the Transit Economics Requirements Model to offering solutions for detecting bridge height to the testing of Vehicle-to-Everything (V2X) radio performance.

Georges Aoude, Ph.D., is CEO and co-founder of Derq, an award-winning MIT-spinoff. Aoude holds a Ph.D. and M.S. in Aerospace Engineering from MIT, where he worked closely with NASA, the US Navy, and Ford. After MIT, Dr. Aoude has advised governments, multinationals, and startups in North America and the GCCs in transportation and aerospace industries.

Jim Misener is Senior Director, Product Management and the Global V2X Ecosystem Lead for Qualcomm and develops and executes Qualcomm's C-V2X deployment strategy across all global regions. Jim was a pioneer in vehicle-highway automation and vehicle safety communication at the California Partners for Advanced Transit and Highways (PATH) at UC Berkeley.

Sue Thomas, P.E., PMP, has been managing traffic engineering projects in the NYC area for over 10 years. She has been active in ITS-NY since 2009 and is currently serving as the President. She is a licensed professional engineer in multiple States and a certified Project Management Professional. She has been with KLD since 2001 and was appointed Vice President in 2016, then Chief Operating Officer in 2023.

Satya Muthuswamy, P.E., PTOE, has been with KLD since 2002 and was appointed President of KLD Engineering, P.C., in 2013. He has a strong background in the development and application of traffic simulation models at multiple resolutions and scales. He is a licensed Professional Engineer and Professional Traffic Operations Engineer.

Bob Rausch, P.E., is a Vice President with TransCore with over 50 years' experience in the development and deployment of ITS including NYC's 13,000 intersection Traffic Control System. He led the engineering team for NYC's Connected Vehicle Project. He has also been an instructor in ITS Project Management, Traffic Signal Systems, and Connected Vehicle Technology.

Govind Vadakpat, Ph.D., P.E., PTOE, PMP, is a Program Manager at U.S. Department of Transportation Intelligent Transportation Systems Joint Program Office (ITS JPO). Prior to joining FHWA/USDOT he served as a consultant in private sector delivering projects for state and local highway agencies.

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Speakers and Moderators

Josh Benson, AICP is the Deputy Commissioner for Traffic Operations for the New York City Department of Transportation. Joshua also leads the development of new traffic safety programs and technologies including accessible pedestrian signals, a Connected Vehicle pilot project and new street lighting initiatives.

Edward Fok, P.E., PTOE, is a Transportation Technology Specialist with the Resource Center in the FHWA. He also helps researchers at Turner-Fairbanks and the Joint Program Office advance the state of the art in transportation technologies. Ed came to FHWA from the City of Los Angeles with 11 years of operations and research experiences and holds multiple professional engineering licenses.

Evangelos Simoudis, Ph.D., has over 30 years of experience in Silicon Valley, and is a seasoned venture investor, senior advisor to global corporations, and a recognized thought leader in big data, digital platforms, and corporate innovation. He is also author of the books The Big Data Opportunity In Our Driverless Future and Transportation Transformation.

Steve Levine became the Executive Director of TRANSCOM in September of 2017. His most recent role was E-ZPass NY Program Manager at Conduent. He holds an M.P.A. from Baruch College, a Master of Engineering from Penn State and Bachelor of Engineering from The Cooper Union. He's also a member of ITS NY and ITS NY Boards.

Tim Johnson is the Director of IoT Sales in the Fleet, Public Sector, and SMB/Mid Market for T-Mobile. He has held several leadership roles in sales and Product/Business Development where he drove IoT/Connected Community Eco-system growth, including around advanced transportation/mobility solutions.

Carl Puddy has been with Miovision Technologies on the ITS side of their business for the last six years focusing in New York, as well as the northeast US. Carl works to educate state DOT's, counties, cities, MPO's and engineering firms to utilize data-driven technology as it relates to safer, more efficient traffic control.

Rob Holbrook has served in NYC government for 19 years as a land use planner at the Department of City Planning and New York City Economic Development Corporation. At NYCEDC, he served as the senior policy technical advisor and land use planning department director. He has now joined the Mayor's Office of Planning and Policy and has the best title in city government, Executive Director of Get Stuff Built.

Paul Rothman is Director of Smart Cities + IoT within the NYC Office of Technology and Innovation. Paul works with agencies, academic institutions, and communities to pilot and evaluate innovative technologies and concepts to address City challenges. Paul launched the NYC Smart City Testbed to pilot emerging technologies in the public realm and co-authored the 2021 NYC Internet of Things Strategy.

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Adam Levine, P.E., AICP, is the Executive Director of the New York Metropolitan Transportation Council (NYMTC). Previously, Adam served at the New York State Department of Transportation, most recently as the Regional Traffic Engineer for New York City. Recent prior NYSDOT positions include Regional Traffic Engineer and Transportation Management Center manager for the Hudson Valley, and Public Information Officer for New York City.

Judith Peter, P.E., has worked for NYS Department of Transportation for over 25 years in the Construction, Traffic Safety and Mobility and Planning Unit. She also served as an Assistant to the Regional Director for eight years. Her current position is as a Joint Transportation Management Center Manager. Judith is also an Adjunct Professor at the City College of New York.

Yiqiao Li, Ph.D., is an Assistant Professor of Civil Engineering at the City College of New York (CCNY). Prior to joining CCNY, she worked as an Assistant Project Scientist at the Institute of Transportation Studies at the University of California Irvine. Her research focuses on data and insights for supporting sustainable and resilient transportation systems.

Eugene Vinitsky, Ph.D., is an Assistant Professor in Civil Engineering and an affiliated professor of Computer Science Engineering at NYU Tandon. His work focuses on automation and control in multi-agent systems with a specific focus in using reinforcement learning to improve performance in multi-agent transportation systems.

Wenwen Zhang, Ph.D., is an Associate Professor at the Bloustein School of Planning and Public Policy at Rutgers University. Previously, she was a research assistant at the Center for Spatial Planning Analytics and Visualization and an assistant professor of Urban Affairs and Planning at Virginia Tech. Her research focuses on the social and policy impacts of emerging transportation technologies.

Ruwen Qin, Ph.D., is an Associate Professor of Civil Engineering at Stony Brook University. She is affiliated with the Institute for AI-Driven Discovery and Innovation at SBU, and she is also an investigator of the USDOT funded Rural Equitable Accessible Transportation (REAT) Center. Her current research focuses leveraging human intelligence into embodied artificial intelligent agents.

Yongjie Fu, is a Ph.D. student in Civil Engineering and Engineering Mechanics at Columbia University, specializing in Machine Learning for Smart Cities. His research focuses on deep learning, reinforcement learning, and intelligent transportation systems. He has experience in developing algorithms and simulations for traffic prediction, traffic signal control, and digital twins. He holds a B.E. in Automotive Engineering from Tsinghua University.

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Special Thanks to the Organizing Committee:

Arthur T. O'Connor, Judith Peter, Kaan Ozbay, Lizzie Pohl, Mini Varghese, Mohamad Talas, Shri Iyer, Subin Babu

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