KPMG

Where "the art of the possible" meets the road

Client story

Client	Sector	Project
U.S. State agency	State and local government	Infrastructure management innovation

Client challenge

As the nation's transportation infrastructure ages, government agencies like state Departments of Transportation (DOT) are pressed to maintain critical systems with finite maintenance budgets. To that end, this state DOT has assembled a library of approximately 20 million images: every stop light, directional sign, street and highway exit in its purview. The agency asked KPMG to bring AI savvy to the challenge of building analytic models that could recognize, classify and geo-locate each of them on the state map, then use historical data to generate scenario forecasts and prioritize upkeep or repair investments.

Working together, KPMG and the DOT designed and tested AI-driven models that combined neural networking and image augmentation with geographic information systems and dashboard reporting. The new tools deliver an instant view of the state's transportation infrastructure and support asset preservation budgeting, and can also be leveraged to help envision the future of mobility and enable self-driving cars. KPMG helped the state DOT develop AI-driven models that represent firsts for government agencies, and make the promise of AI real.

Benefits to client

This state DOT has advanced the application of AI to public infrastructure inventory and maintenance, with leading analytic models. Specific benefits include:

— Improved decision support tools now available to help the state DOT executives better analyze maintenance budgets in the face of an aging infrastructure base

— Successful demonstration that AI innovation, like convolutional neural networking and geolocation modeling, can be applied at scale to massive image inventories

— The state DOT's own data science practices advanced, with analytic precedents now in place to adapt the analytic models to other state asset classes

KPMG response

KPMG helped the state DOT leaders think from "the art of the possible" to envision AI-driven applications for infrastructure identification and asset preservation. KPMG:

— Combined proprietary KPMG image recognition AI with the state's DOT image assets to design proof-of-concept analytic models that could geo-locate photographed infrastructure assets and provide an inventory count, accessible via interactive dashboards

— Tested the model on a data set of approximately 20 million state DOT images, using KPMG's high-speed graphical processing power

— Joined forces to create structured development practices between KPMG and the state's DOT, leveraging and combining proprietary KPMG AI tools and state DOT image assets

— Provided wide-ranging implementation know-how and guidance to manage the practical challenges of bringing a frontier AI application from vision to reality.

KPMG insights

We turn advanced analytics and AI into pragmatic solutions.
As AI moves from a "like to have" to a "must have" capability, KPMG helps public- and commercial-sector clients include the right combination of technology, organizational capital, and data strategy to advance their own AI agendas.

We know State & Local government.
Government entities like state DOTs operate in conditions where quantifiable results must meet taxpayer expectations for accountability. KPMG is well-versed in adapting commercial-sector innovation—including AI—to their mission and unique stakeholder priorities.

We actively explore ways to bring "the art of the possible" to life.
As part of our commitment to help clients achieve their vision, we structured an innovative co-development practice model that leveraged the AI modeling capabilities of KPMG with image assets from the state's DOT, ultimately transforming their approach to asset preservation.

If you are interested in learning more about this case study, or if you are experiencing similar issues, please contact us.

Viral Chawda
vchawda@kpmg.com
832-535-8712

Arun Aggarwal
arunaggarwal@kpmg.com
816-645-3168

Oscar Bedolla
obedolla@kpmg.com
312-665-4518

AI, automation, and analytics are central to the success of the 21st century enterprise. For more information on how KPMG is enabling transformation and reimagining work, go to: kpmg.com/us/ai.

Some or all of the services described herein may not be permissible for KPMG audit clients and their affiliates or related entities.

kpmg.com/socialmedia