



FRONTIERS:

Future Research Opportunities in New Technologies Investigated by Entrepreneurs, Researchers & Students

An opportunity for Innovation Powered by the FIT

The FedEx Institute of Technology is the applied innovation arm for the University of Memphis Division of Research and Innovation. The Institute, founded in 2003, was predicated on the idea that great ideas can be explored best through the collaboration of innovative industry best practices and the cutting-edge of research and development. To excel beyond the hype of emerging technologies and create sustainable innovation that emphasizes your company's role as a global innovation leader, the FIT has created a program that aligns resources, amplifies impact and creates an avenue for corporate leaders to explore big ideas, build workforce pipelines around future technologies and help answer the question – what's next?

FRONTIERS Partnership Program

Early stage innovations, pilot projects and ideas that need expert leaders in cutting-edge disciplines to overcome internal challenges to execution are eligible for this program. The FedEx Institute of Technology will use research to solve big challenges facing your organization, and work with corporate leadership to build on a core of innovation and collaboration; creating a large scale, sustainable ecosystem for the development, recruitment and retention of top tech talent.

To succeed, the program requires the commitment of corporate leadership who are deeply familiar with the challenge that the FRONTIERS team is working with you to solve. These are not your immediate challenges – they are the ideas that will transform your business in the next 3-5 years. The pilot period, 3-6 months, is conducted at no cost to your corporation. During the duration of the project, the team will work closely with FedEx to explore the idea and help answer questions or build prototypes and models with the FedEx team.

FedEx FRONTIERS: Path to Engagement

In the most recent earnings call, FedEx highlighted future-ready strategies well suited to the FRONTIERS program – e-commerce readiness, flexibility and automation of the Ground network, data-driven insight and blockchain technologies. FRONTIERS research teams enable early-stage deployment of these and other emerging technologies while delivering the Purple Promise and improving performance across the company. The program is a combination of high-tech workforce and knowledge that is hard to secure and even harder to scale. By leveraging the FRONTIERS program, you can accelerate your timeline to delivery and ensure that a pipeline of talent is available that knows the standards FedEx expects.

FedEx Frontiers Deliverables

- » An Agile-ready team of research faculty and world-class students working closely with FedEx leadership on the opportunities for growth identified in the earnings call
- » Deliverables scoped to FedEx needs including white papers, alpha prototypes, or other outcomes needed to scale innovation within the company
- » Ownership of intellectual property generated through this program
- » Cultivation of a collaborative community that ensures the topics that FedEx emphasizes are the topics of meetups, hackathons, and the innovation community in this city
- » International promotion of the concepts and ideas generated by FedEx Frontiers, done in partnership with FedEx marketing and promotion
- » Exposure to talent and an opportunity to hire the best students from each FRONTIERS team

Examples of Expertise:

Blockchain – Kan Yang is a rising star at the University of Memphis, whose innovative work in blockchain technologies has focused on decentralized trust management in vehicular networks. He has shown that using Bayesian Inference Models, vehicles can autonomously share credentialing. The opportunities for uniform standardization that this presents are valuable to conversations around customs control and trans-border logistics.

E-Commerce – Srikar Velichety is a member of our Business Information Technology faculty and an expert in explainable AI. His work has centered on the generation of knowledge repositories using big data and social network – a critical area for corporations looking to learn more from the user’s online experiences and interactions with the company. His work sits at the intersection of AI and user interfaces, a space where e-commerce thrives.

Automation and AI – Christos Papadopolous is the Chair of Excellence in Global Research Leadership and an renowned scholar in Named Data Networking - the standard in autonomous vehicle-to-vehicle communication. He is joined this year by Weizi Li, a junior faculty member who left MIT to join the UofM’s growing community of AI and automation faculty, and specializes in simulation of AI-driven autonomous vehicle modeling and simulation, including an emphasis on graphDB and traffic modeling.

Data-Driven Insights – Big data requires big solutions. Dr. Huigang Liang, the FedEx Chair of Excellence in Business Information Technology, is at the bleeding edge of how big data networks can be leveraged to create solutions. Some of Liang’s current interests include IT security, IT alignment, IT ambidexterity, healthcare IT, and data analytics.

Alternative Energy and Electrification – From electric vehicles to preparing facilities for alternative energy capacity, preparing for the future requires research. Dr. Sabya Mishra, Civil Engineering Professor and Co-Director of the FIT Smart Cities Cluster, and Dr. Alex Headley, Mechanical Engineering Professor working in energy storage are ready to assist with the practical considerations of making alternative energy a viable future for FedEx.

Learn More

Want to learn more about how your company can be involved? Connect with Rami Lotay, Project Manager with the FedEx Institute of Technology, at rslotay@memphis.edu.