How A.I. Could Reshape the Economic Geography of America

As the technology is widely adopted, some once-struggling midsize cities in the Midwest, Mid-Atlantic and South may benefit, new research predicts.

By Steve Lohr
Steve Lohr has covered the way tech is reshaping the work force for more than a decade.

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Chattanooga, Tenn., a midsize Southern city, is on no one's list of artificial intelligence hot spots.

But as the technology's use moves beyond a few big city hubs and is more widely adopted across the economy, Chattanooga and other once-struggling cities in the Midwest, Mid-Atlantic and South are poised to be among the unlikely winners, a recent study found.

The shared attributes of these metropolitan areas include an educated work force, affordable housing and workers who are mostly in occupations and industries less likely to be replaced or disrupted by A.I., according to the study by two labor economists, Scott Abrahams, an assistant professor at Louisiana State University, and Frank Levy, a professor emeritus at the Massachusetts Institute of Technology. These cities are well positioned to use A.I. to become more productive, helping to draw more people to those areas.

The study is part of a growing body of research pointing to the potential for chatbot-style artificial intelligence to fuel a reshaping of the population and labor market map of America. A.I.'s transformative force could change the nation's economy and politics, much like other technological revolutions.

“This is a powerful technology that will sweep through American offices with potentially very significant geographic implications,” said Mark Muro, a senior fellow at the Brookings Institution, where he studies the regional effects of technology and government policy. “We need to think about what’s coming down the pike.”

At issue is a new and rapidly growing breed of the technology known as generative A.I., which can quickly draft business reports, write software and answer questions, often with human-level skill. Already, predictions abound that generative A.I. will displace workers in call centers, software developers and business analysts.

That pattern of technology disruption has happened before. The industrial revolution mechanized agriculture, pushing workers off farms and into cities. Modern cars and roads brought the rise of the suburbs in the 1950s and 1960s. Factory automation and globalization, accelerated by the internet, destroyed jobs in traditional manufacturing centers, depopulating parts of the Midwest and South.

While uncertainty remains about how fast and how far into workplaces generative A.I. will reach, a series of studies have concluded that the impact is likely to be substantial, perhaps automating the equivalent of millions of jobs.

To date, the regions benefiting the most from the rapidly progressing technology have been a handful of metro areas where scientists are building A.I., including Silicon Valley.

But those places are also some of the ones most apt to face issues as A.I. gets better and can automate jobs, according to the labor economists’ study. Centers of technology and office work including San Jose, San Francisco, Washington, New York and Boston are home to large numbers of high-paid workers, from business analysts to computer programmers, whose tasks involve generating words or code, which is what A.I. does well.

But exposure to A.I. does not necessarily translate to sweeping job losses. These cities, the economists note, have proved to be among the most resilient, dynamic places in the country, able to withstand setbacks and recover.

In their paper, the two labor economists identified nearly two dozen metropolitan areas expected to benefit from the broader adoption of A.I. technology, including Dayton, Ohio; Scranton, Pa.; Savannah, Ga.; and Greenville, S.C.

Chattanooga is already attracting technology-enabled businesses and workers.

Evan Shelley describes his start-up, Truck Parking Club, as "Airbnb for truck parking." Whitten Sabbatini for The New York Times

Evan Shelley moved to Chattanooga from Miami last year, bringing his start-up with him. He describes Truck Parking Club, his two-year-old business, as “Airbnb for truck parking.” It links tens of thousands of long-haul truckers to more than 1,100 parking locations around the country — sites ranging in size from a few parking spaces to hundreds.

Mr. Shelley, 30, said Chattanooga’s cluster of trucking companies, freight brokers, shippers and transportation tech companies “just makes a ton of sense for us.” He has fostered relationships with expert advisers in town, and Chattanooga’s amenities for start-ups include modern co-working spaces, very fast internet service and access to investors, he said.

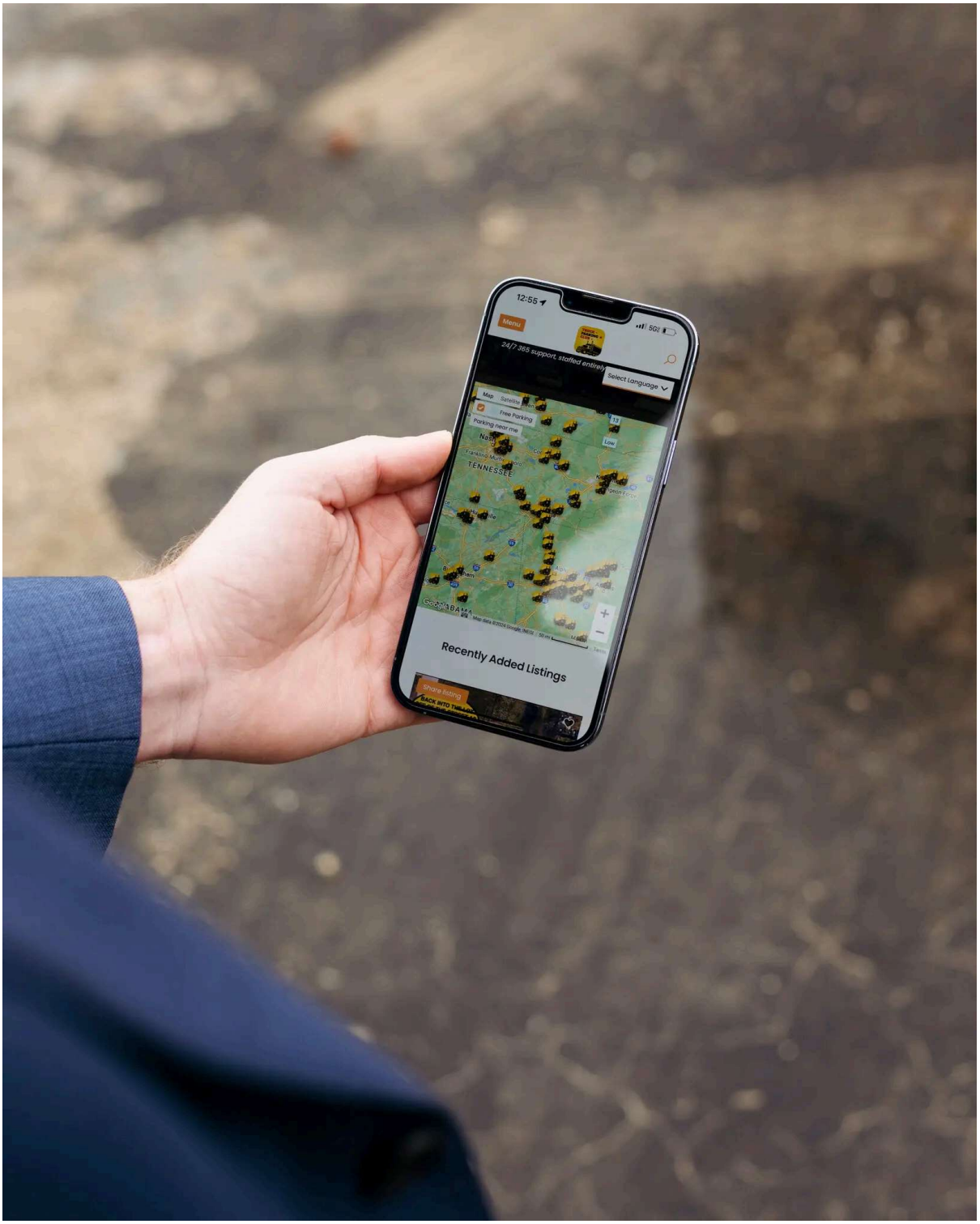
Most customer service is now handled by phone and staffed by former truck drivers. Their expertise, Mr. Shelley said, is a crucial asset and a selling point. But the start-up is developing generative A.I. for its mobile app to answer basic questions and to assist its customer service workers.

Chattanooga’s city-owned utility, EPB, has been a tech pioneer, offering some of the world’s fastest internet service for more than a decade, and it remains an innovative leader. Last year, EPB began offering a commercially available quantum network to let businesses and scientists experiment with the emerging technology of quantum computing.

The city government is experimenting with chatbot technology, training the A.I. on the text of its local laws, regulations and ordinances. The software will answer questions or operate as a conversational assistant to walk citizens through tasks like getting a business license.

“We’re trying to prepare our people for working with A.I., focus on the benefits and make the most of it,” said Tim Kelly, the mayor of Chattanooga.

Chattanooga has nurtured other start-ups in logistics, shipping and trucking, taking advantage of its location in “Freight Alley,” connected by interstate highways to Atlanta; Nashville; Knoxville, Tenn.; and Birmingham, Ala.



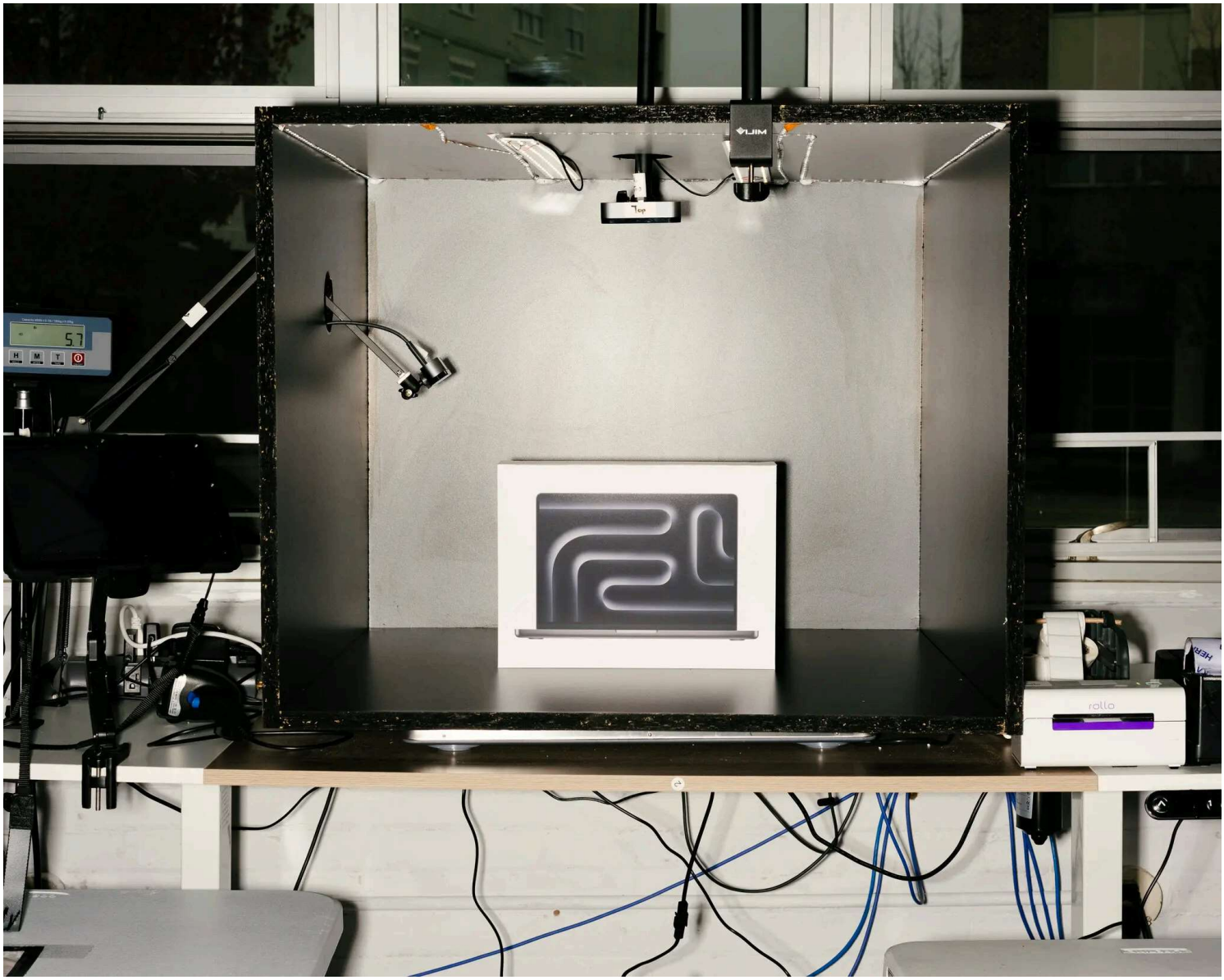
Truck Parking Club links tens of thousands of long-haul truckers to more than 1,100 parking locations around the country. Whitten Sabbatini for The New York Times

Shappi, a start-up shipping consumer goods to South America, moved to Chattanooga from San Diego two years ago, in part thanks to investors in the area. Shappi operates an online marketplace connecting shipments with travelers who carry the goods in their luggage, for a fee.

The company employs 26 people to create the custom-designed image recognition and data-collection technology for classifying goods and arranging deliveries.

Karla Valdivieso, right, and her Shappi co-founder, C.J. Valdivieso. Shappi, an online marketplace that connects shipments with travelers who carry the goods in their luggage, moved from San Diego to Chattanooga two years ago. Whitten Sabbatini for The New York Times

Karla Valdivieso, co-founder and chief executive, said it was easier to recruit people to a start-up in Chattanooga. She cited an ample pool of educated workers and affordable housing — two of the key characteristics identified in the study for cities picked as potential winners in the rollout of A.I.



Shappi's AI Stage. The company employs 26 people to create the custom-designed image recognition and data-collection technology for classifying goods and arranging deliveries. Whitten Sabbatini for The New York Times

A FedEx driver delivering packages to Shappi's headquarters in Chattanooga. Whitten Sabbatini for The New York Times

Shappi has adopted some generative A.I. technology in its customer service operations to help its staff answer questions faster and more accurately.

“We’ve used it to make our people more effective,” Ms. Valdivieso said. “I’m always open to more technology, but it’s not there yet. It’s going to be A.I. plus humans for the foreseeable future.”

Steve Lohr writes about technology and its impact on the economy, jobs and the workplace. More about Steve Lohr