

## ELEVATOR PITCH

# HUM Industrial Technology

Byron Porter was intentional about the name of his young startup. “In an industrial operation, a hum is good,” Porter said. “It means everything is working and there are no surprises.”

With HUM Industrial Technology, Porter is taking that hum to the next level. Using “vibration analysis” and machine learning software, Porter has created a monitoring device about the size of a deck of cards to track railcar movements and anticipate when that rolling stock needs maintenance. In an industry where accidents are rarely small, Porter says ditching 40-year-old technology can solve three problems.

First, by monitoring vibrations—the hum—in railcar wheels, bearings and track, Porter’s sensors and machine-learning technology can gauge in real time potential maintenance issues and even estimate how long before a failure. Porter notes that the industry has experienced 125 incidents related to wheel bearing failures since 2015, resulting in \$250 million in related expenses.

In contrast to Porter’s real-time, smart technology, railroads today rely on “hot box detectors” spaced 20 miles apart that measure when wheel bearings are overheating. “By the time a bearing is hot, it’s already failed,” Porter said.

Second, HUM could improve the predictability of shipments—a chronic problem. “You’re prepared to unload on a given day, you have a crew scheduled,” he said. “But when the train does arrive four days later, you’ve wasted four days paying a crew for each of those days because you thought the train would arrive.”



Finally, Porter says his innovation could improve safety in the compact, busy and notoriously dangerous railyards where manufacturers receive goods. A more sophisticated, real-time system using machine learning could create a clearer digital map for operators to monitor railcar movement.

“I’m an engineer, and engineers like to solve problems,” he said. “You see people get hurt and operational headaches and you think there has to be a better way. Because I can see a better way, I want to make that happen.”

## THE FACTS

### STARTUP STATS

- Established as an LLC on April 12, 2019, and developing as a bootstrap operation at this point.
- 4 million railcars are in operation globally.
- 40-year-old technology tracks railcars and monitors for maintenance issues.
- HUM applies machine learning and “vibration analysis” to anticipate maintenance issues and track rolling stock.

### TEAM

Byron Porter, MBA '20  
Founder, CEO and lone  
employee right now



### COMPETITION PARTICIPATION

- Third-place, receiving \$2,500, in the April 17, 2019, Skandalaris Venture Competition
- Recipient of a \$1,000 grant from the Holekamp Seed Fund

**More information:**  
[humindustrial.com](http://humindustrial.com)