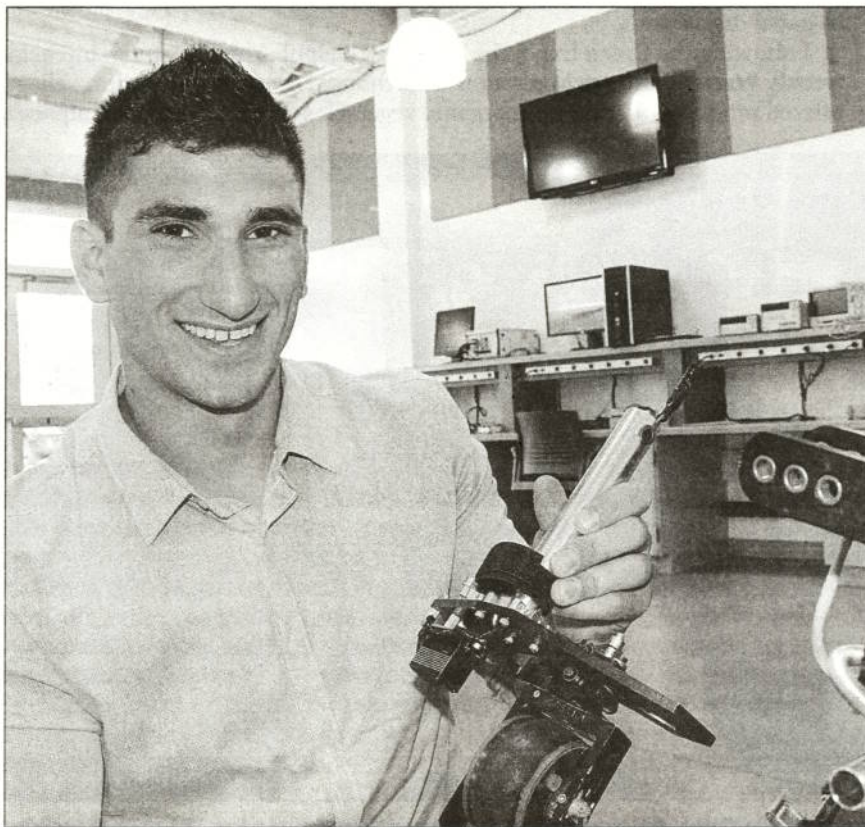


TRENDING TechBelt

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Jake Loosarian, vice president, Gecko Robotics, holds a piece of the robot.

Robots in the Pipelines

Grove City College grads innovate pipe-climbing GeckoBot-U1 robot.

BY MICHAEL MOLITERNO

Jake Loosarian, 23, breaks into a grin as he imagines the future. In it, the stockpile of robots he's designed and built has gone from one to more than a half dozen that can be deployed at a moment's notice.

It sounds the like the origin story of a comic book supervillain but it could soon be a reality. While Loosarian's goals are nowhere nearly as ambitious as world domination, they aren't far off. He wants to change the energy industry the world over.

"It sounds fantastical," he says, "but that's why we're designing these robots."

Loosarian is vice president of Gecko Robotics, a startup housed in

the eCenter at LindenPointe in Hermitage, Pa.

"A robotic enterprise focused on inspections," is his company's tagline.

Along with his business partner, Orion Correa, also 23, Loosarian designed a pipe-climbing robot named the GeckoBot-U1. The U stands for ultrasonic.

"We wanted to come up with a cool, innovative idea," he says. The robot they designed rides along circulating-fluid-bed, or CFB, pipes found in coal-fired power plants. Magnets cause the GeckoBot to adhere to the pipes. It's then driven remotely to the location in question where it uses ultrasound technology to determine the thickness of the pipes and identify potential problems.

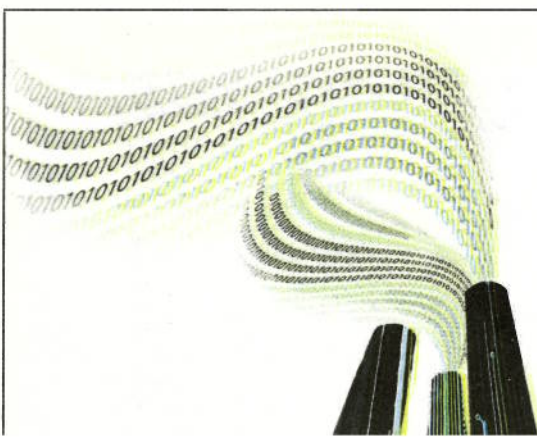
"Not only can you see the pipes," says Loosarian, "you actually know the thickness of the pipes. That's a game changer."

How much of a game changer is hard to say, even for Loosarian, but

[Now] the odds for a high-tech future are stacked in our favor.

The Mahoning Valley has become a center of successful tech-based entrepreneurship led by an incubator focused exclusively on growing technology companies.

With a track record of launching successful



that's not stopping Gecko Robotics from examining the many possibilities.

In the United States are 113 plants that use CFB boilers, many of them in Pennsylvania. "We've made our robot adjustable to different size pipes," says Loosararian. "So the ability to expand into different markets is something we're planning for."

Those markets include expanding overseas to countries such as China, a nation still building coal-fired plants. One day, Loosararian imagines, GeckoBots will inspect everything from nuclear power plants to sewer pipes.

It's this foresight and vision that attracted the attention of Ben Franklin Technology Partners, who awarded Gecko a \$10,000 grant to help Loosararian and Correa get their product off the ground.

"They now know exactly what they need to do to go on to the next stage," says Jim Kosco, northwestern Pennsylvania director at Ben Franklin. In addition to a great deal of "moxie," Kosco saw something special in the dynamic duo because they were "a couple of recent college graduates who actually stayed in the area."

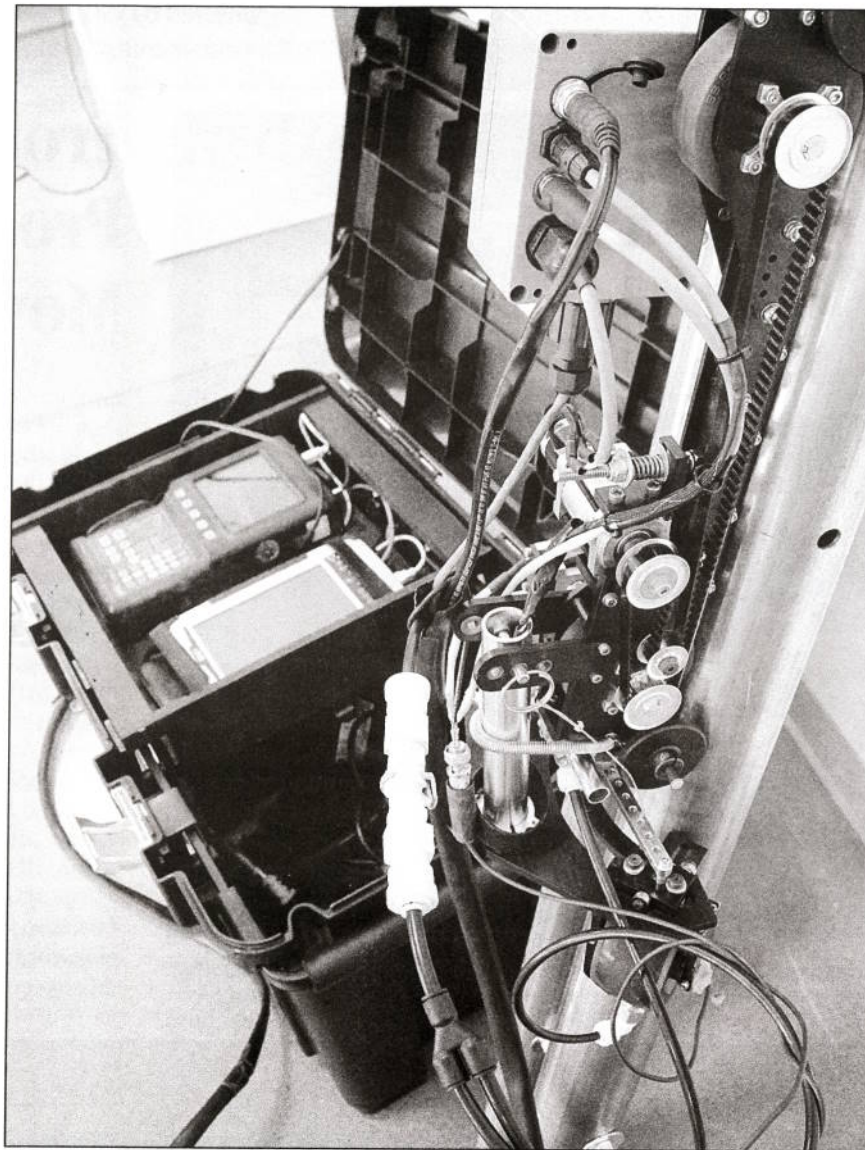
Ben Franklin's mission is to stimulate entrepreneurial potential by providing capital, knowledge and networks. Kosco says Gecko and Correa are headed in the right direction and his organization intends to keep supporting them.

"We're ready for the next stage and when they're ready, we'll be there," Kosco promises.

Meanwhile in a glass room inside the eCenter, Loosararian sits with his head mentor, Yvonne English, to discuss how to get there.

"She's really done a lot to help us as a company and help us make the right decisions," Loosararian remarks.

In addition to endorsing the grant from Ben Franklin, the eCenter provides Gecko with workspace, offices, meeting rooms and a business address.



The prototype is controlled remotely and uses magnets to move up and down the pipes.

"What's happened has been really magical," says English, also the executive director of the eCenter.

English has been working with Gecko since concept stage. When she knew they had something special, she brought them into the eCenter and couldn't be happier with the results.

"We've actually seen an ecosystem of entrepreneurship here work," she says.

Loosararian adds, "We wouldn't be here without them basically."

Loosararian and Correa met as electrical engineering students at Grove City College. The former is from Westminster, Md., Correa from Seattle, Wash.

They ended up on a team of four students working on a senior project. It was then they met Jeff Campbell, head engineer at the Scrubgrass Power

Plant in Kennerdell, Pa. Campbell had an idea to use robots with cameras to do visual inspections.

"He wanted to be able to see visually if there was any damage that could cause an outage," Loosararian says.

So the team redesigned an existing robot and equipped it with ultrasound. That's when Campbell told them they had a product.

Because of the expense, power plants do inspections once a year on average. A typical inspection costs around \$130,000 to perform and involves a team of 12 men building a network of scaffolding to reach the site of a suspected problem and visually inspect it.

Loosararian hopes the lower cost of his GeckoBots and the absence of humans in jeopardy will allow companies to perform inspections two or three times a year. That should result in fewer outages and longer lives for the plants.

And, Loosararian adds, since most plants are inspected only once a year, the data obtained are limited the other 364 days. His technology allows a plant to inexpensively perform an inspection that could prevent an outage when considerable power is needed, say on a 95-degree day. "To be able to gauge how much that's worth? It's left to your imagination," he says.

Through research Ben Franklin provided, Gecko learned power companies aren't interested in buying the robots, so he and his partner have fashioned themselves instead as a service business. The company has one prototype and hopes to do its first inspection next spring.

Loosararian named the company after a visit to Costa Rica and saw a gecko climbing the wall next to him.

In five years he would like to have a half dozen GeckoBots, and from there, he says, who knows?

"There's a lot of different markets and industries that this can apply to," he says.