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- “They’ ve evolved to sense and respond to information. It’ s just trillions of calculations going on at all times all around us,” Brandon Fields, Fieldstone Bio ’ s co-founder and chief science officer, told TechCrunch. “How do we take that and actually manipulate that to gain benefits for us?”
- “The key technology out of Chris’ lab is this idea of, ‘How do we actually visualize these cells from really far away?’ ” Fields said.
- The images aren’ t the usual aerial photography seen on Google Maps. Rather, they’ re taken using what’ s known as a hyperspectral camera, which divide visible and infrared light into as many as 600 different colors. Because Fieldstone’ s microbes will reflect light at a very specific wavelength, it can train AI models to look for those signals amid a torrent of data.

“That’ s where the power of AI comes in, because we can start using that information to tease out these really faint signals to produce really cool heat maps of the microbe sensing the environment,” Fields said.

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Fieldstone’s technology emerged from that question. The startup was founded in 2023 after spinning out of MIT, where professor Chris Voigt’s lab had developed a way to turn microbes into sensors. The scientists programmed the microbes to change color when they encountered something of interest, whether it be nutrients in soil or landmines hidden in the dirt, and then figured out how to detect them.

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Fieldstone Bio recently raised $5 million in seed funding led by Ubiquity Ventures with participation from E14 and LDV Capital, the company exclusively told TechCrunch. The startup has been testing its technology in the lab, and the funding will let it test those microbes in the real world.

Each strain is tailored to sense a particular compound, such as nitrogen on a farm field or TNT residue from a landmine.

“We isolate microbes from the environments we want to sense,” Fields said. “We build our sensors the DNA pieces, and we just drop them into these different ones and see which ones behave the best, which ones can last the longest.”

Figure 1: image.png|Left|700