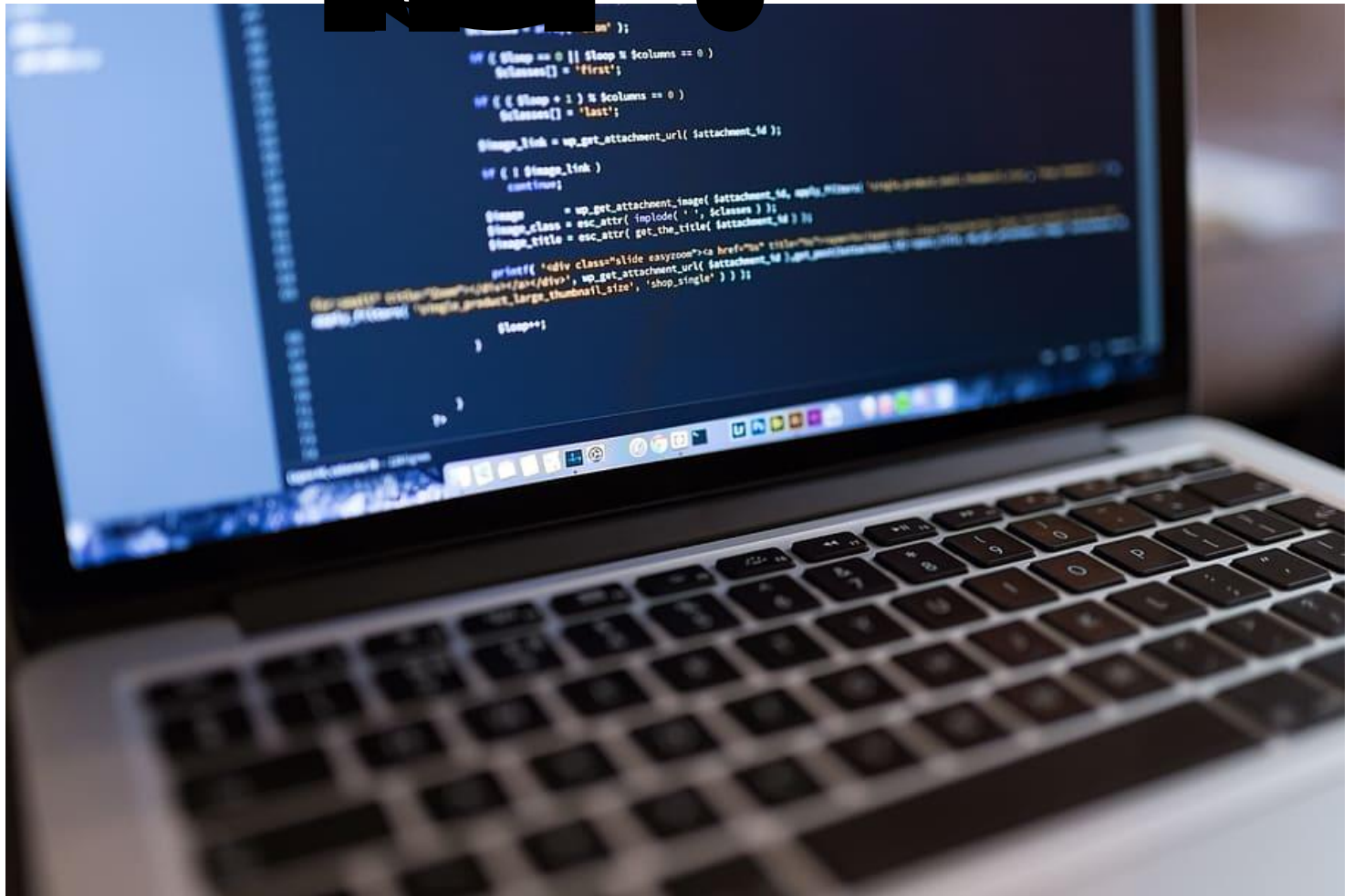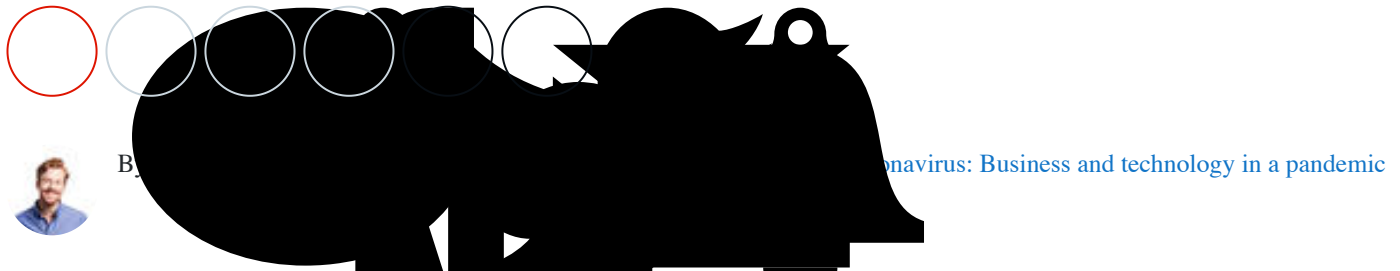# Brilliant: One team's 48-hour COVID-19 hackathon

The story of a small but passionate team, thoughtful leadership, and the best of what technology can offer human beings.

By [...] navirus: Business and technology in a pandemic

Boston has been dealing with an enormous problem. The region is one of the epicenters of the COVID-19 pandemic. People suffering from homelessness are among the most vulnerable during the pandemic, and Boston has a large homelessness problem.

LATEST DEVELOPMENTS
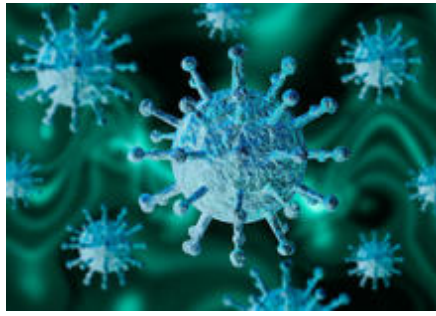
Coronavirus: Business and technology in a pandemic

From cancelled conferences to disrupted supply chains, not a corner of the global economy is immune to the spread of COVID-19.

Read More

So here's the challenge: How can Boston manage the enormous inflow of potential COVID-19 patients? There is a structure in place thanks to the Boston Health Care for the Homeless Program (BHCHP), but administrators now must manage a large number of facilities with limited numbers of beds, varying amenities, and a rapidly changing situation on the ground at each facility. Patient needs vary with dizzying complexity -- preexisting conditions, exposure levels, and a host of other concerns make some patients ill-suited for some types of facilities or preclude some types of patients from sharing space.

What to do? How about call in the programming cavalry?

I love this story because it's an illustration of the power of a small but passionate team, thoughtful leadership, and the best of what technology can offer human beings. Last week, Boston Medical Center put out a call through an MIT network that it was looking for programming help to build a platform to automate patient intake and bed assignments for the homeless during the COVID-19 crisis.

The request caught the attention of a company called Routable AI, a startup out of Boston founded by MIT alums that develops AI-powered vehicles and transportation management technologies (think of the backend that drives Uber).

"At its core, this is an optimization problem," reflects Menno van der Zee, CEO of Routable, in a recent post about his team's efforts, "and although different than our usual context, this is something that we are specialized in at Routable AI. Our CTO Alex Wallar and our engineering team determined that this was an important problem to solve. They took initiative and decided to drop their usual work for a few days to help out."

Thus began a 48-hour programming sprint that yielded a prototype hospital bed management system.

Discover the Voices of Small Business

"Our system keeps track of every bed in each facility used for the health care for the homeless program," writes van der Zee. "Each bed has a set of labels, describing characteristics such as whether this is a bed for known exposed patients and whether it has access to a private bathroom."

But, van der Zee points out, the real magic happens when you press the allocate beds button. In its regular work, Routable AI has developed several in-house optimization tools, which it deployed here to not only enable the system to automatically decide which patients to send to which facility, but which specific bed among those available the patient should occupy. In essence, the system detangles the massive complexities of matching the dynamic characteristics of the patient population with those of various facilities.

The team went a step further by using its vehicle routing technology to help dispatch a fleet of ambulances.

"By connecting these two systems, we can automatically dispatch ambulances to transport patients to the facility they are assigned to."

Once they had a working prototype the Routable AI team tested and refined the system. Just four days after receiving the call for help, the company deployed its bed management system to Boston Medical Center free of charge.

Most important: It's actually being used.

"I want to take a moment to say THANK YOU, James [Cox], Alex [Wallar] and the entire Routable AI team," writes Rebecca Mishuris, Associate Chief Medical Information Officer at

BMC, in a statement. "I put out the call for help on Tuesday, March 24 and on Friday, March 27, BHCHP is testing an entirely new system to track available beds for people experiencing homelessness in Boston and in need of respite during the COVID-19 pandemic."

This is a great example of tech at its best. A small team, a driving mission, and some crazy quick coding skills. Routable AI is looking for other organizations that might benefit from the tool. The Boston Health Care for the Homeless Program (BHCHP), which does fantastic work and is on the front lines of COVID-19 in a hard-hit area, is also taking donations now.