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Case Study

MIT/PathCheck Foundation

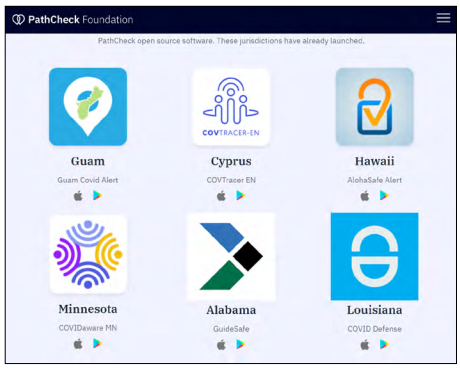
UFT Family enables fastest testing and release of three life-saving COVID-19 apps

Who is PathCheck Foundation?

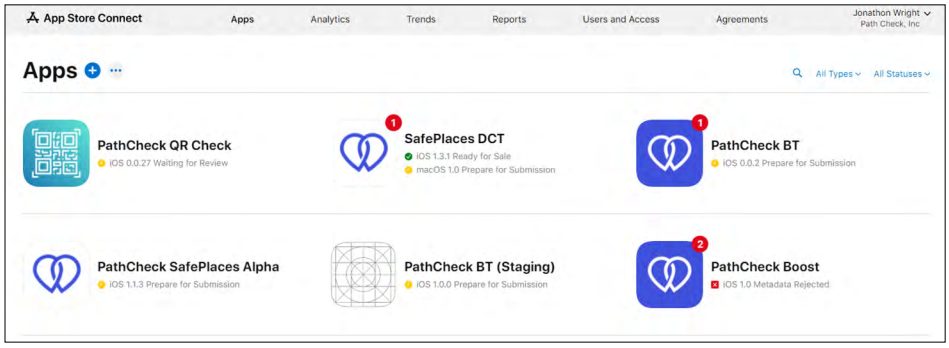
Founded at MIT, PathCheck Foundation is a nonprofit dedicated to providing robust digital solutions to contain COVID-19 and revitalize economies, while preserving privacy.

PathCheck: Community Initiative for Privacy-Centric Covid-19 Contact Tracing

The chilling story of how 'patient 31' managed to infect thousands of people with COVID-19 in a South Korean city brought home the importance of effective contact tracing during a pandemic. It was soon clear that technology would be key to this and around the world different initiatives were launched to achieve this. MIT in Boston, Massachusetts started PathCheck with a small, dedicated team of social entrepreneurs. It soon grew into a community of more than 3,000 individuals, all focused on delivering real-world solutions.



Daniel Wainwright, Chief Digital Officer of Digital Assured, was asked to join for his specific expertise in using GPS to identify people's



PathCheck Foundation

At a Glance

- **Industry**
  Not For Profit
- **Location**
  United States
- **Challenge**
  Support the complex testing effort to bring potentially life-saving apps to market as soon as possible
- **Products and Services**
  UFT One
  UFT Digital Lab
- **Success Highlights**
  + Simplified and 10x faster testing with real mobile device testing
  + Robust and effective API testing improves release time by 60%
  + Apps used in more than 20 different countries or states
  + Full privacy-preserving sharing of data

proximity. He deployed similar Contact Tracing technology while involved in a Smart City project in Copenhagen, but MIT saw how it could make a real difference in the fight against COVID-19. Digital Assured is the largest independent software user community which provides infrastructure support through education, community-building, and advocacy programs for its members, so Wainwright was very familiar with how effective this type of community work can be.

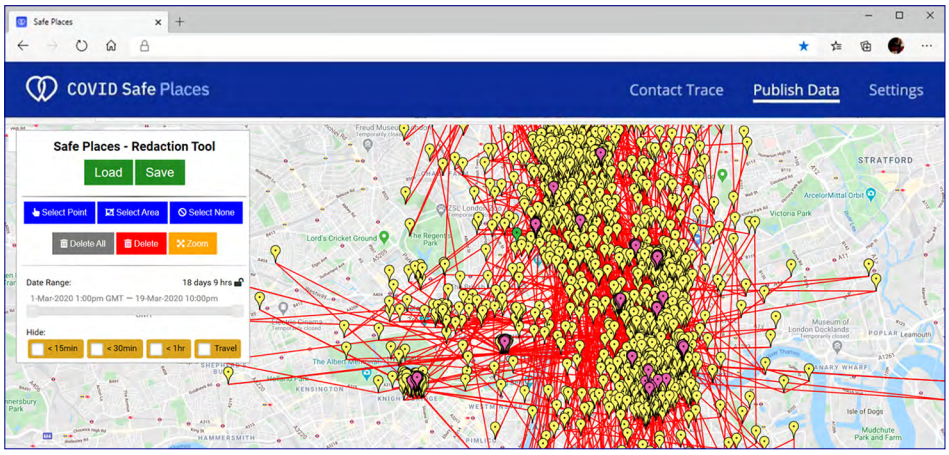
Using mobile technology inevitably brings data privacy concerns. PathCheck operates with privacy at its core, defining the standards for protecting users around the world while still empowering public health teams with the data they need. PathCheck aimed to create a tool that inputs location data from a COVID-19 positive person's phone, redacts patient identifiable information, and then publishes the data in an anonymized, aggregated way leveraging the encrypted trails. This will allow public health authorities to map infection rates with accuracy.

Effective API and Real Device Testing with the UFT Family

Wainwright explains the need for testing during the software development for this project:

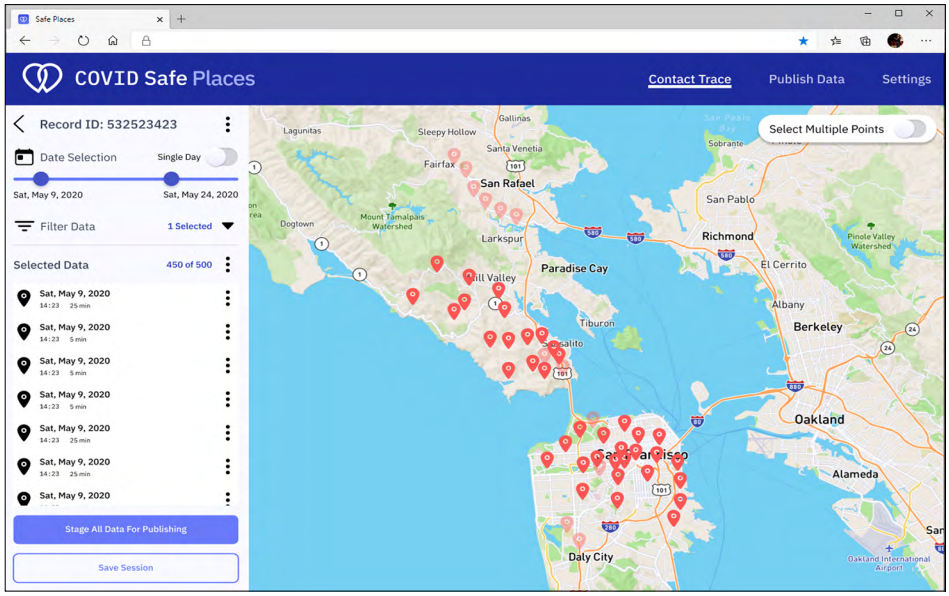
"We are proud to be part of the PathCheck initiatives to combat COVID-19. The UFT Family's enterprise-grade testing capabilities proved the perfect partner for us on this journey. It has been a massive differentiator in helping these life-saving apps reach as many people as possible."

DANIEL WAINWRIGHT
Chief Digital Officer
Digital Assured



"We have a close partnership with Micro Focus (now part of OpenText™) and could see how Micro Focus (now part of OpenText™) UFT One and UFT Digital Lab would be helpful in the testing effort. I had worked with UFT Digital Lab on other projects and the ability to use real mobile devices instead of emulators is really essential in a large-scale testing project. I, and many other testers and developers around the world, had a huge selection of different generations mobile devices that would plug into my laptop running UFT Digital Lab so that we could test the user interface of the PathCheck apps."

Safe Places: Creates Anonymized Maps of Public Places with Positive Patients



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> Chief Digital Officer
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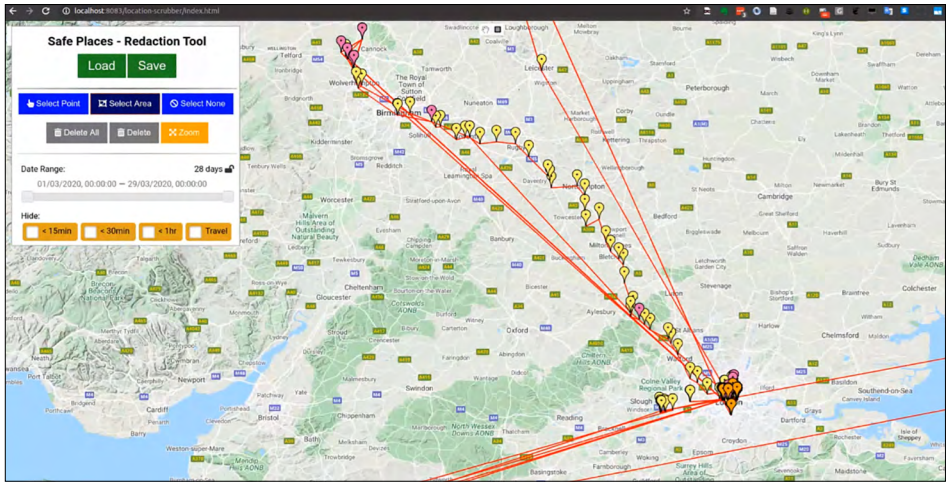
Safe Places is a browser-based mapping tool to help contact tracers more efficiently interview COVID-19 positive patients. It then creates anonymized maps and data files of public places and times where the patient has been. This proactive and preventative method has the potential to save many lives. Wainwright led the Safe Place testing effort with OpenText™ UFT One, testing all APIs and actual interfaces. "Our API tests leveraging UFT One were fantastic and really robust. 12 different API interfaces are used to load any GPX geo-localized tracks in real-time. This then defines the exact load volume to be tested, and with this increase in real-time coverage we calculate the appropriate test frequency to ensure the system is able to manage the expected volumes," he explains. "We synthetically created large data loads to simulate the movement of thousands of people through large cities. We then injected this data for relevant correlations and mapped it with multi-modal transportation options. The issues were very complex from a test management perspective, especially considering the many language versions we produced, but with UFT One we created test scenarios to cover the areas we felt would be of highest value."



Safe Paths: Saving Lives and Looking to the Future

The Safe Paths app integrates with Safe Places and notifies mobile phone users if they have crossed paths with a newly diagnosed COVID-19 patient. With a robust privacy-centric and open source back end, it advises users of their quarantine requirements, empowers them to check symptoms, and delivers trusted news and information to them. The technology is used to understand how COVID-19 is spreading so that intervention can be more specifically targeted. This is particularly helpful in less-developed countries without a central digital health platform or contact tracing solution. Monica Martinez, responsible for COVID-19 App Exploratory testing, PathCheck comments: Our Safe Paths exposure notification (EN) app is now globally the most widely adopted EN solution. The evidence shows that EN works and has a real world impact. The EN programs launched by our partners now reach millions of people and save lives every day around the world."

Boost19: Secure and Privacy-Preserving Workflow

Having successfully rolled out the Safe Places and Safe Paths apps, and remember, all of it is open-source based and free to use around the world, PathCheck turned its attention to the next phase in combatting the pandemic: the global vaccination effort. The Boost 19 app manages the secure and privacy-preserving workflow of phased vaccination, vaccination status verification, and adverse reactions or symptoms reporting. The system improves efficiency, privacy, equity, and effectiveness. Covid Passport testing continues from June 2021 onwards and leverages OpenText™ UFT Digital Lab to test the camera function for QR scanning of the vaccine.

Wainwright concludes: "We are proud to be part of the PathCheck initiatives to combat COVID-19. The UFT Family's enterprise-grade testing capabilities proved the perfect partner for us on this journey. It has been a massive differentiator in helping these life-saving apps reach as many people as possible."

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