innovation works
CASE STUDY

Ditch the Wearables: Sensi Fit Tracks Athletic Performance without the Clutter



Sports performance data has long measured athletes in ways that do not reflect how they actually play. **Izzy Hunter** first noticed that disconnect at age 10, when she joined a youth soccer academy in the UK, training around straight-line sprint times and controlled drills. The problem became much clearer during her collegiate career at Pittsburgh's Point Park University. Each summer, Hunter and her international teammates returned home with a binder of training exercises and tried to prepare for the upcoming season on their own. Without teammates, coaches, or the tools to replicate game-like movements, Hunter often returned to Pittsburgh lacking the cutting, slanting, and change-of-direction work she needed. After her professional soccer career ended, she channeled that firsthand frustration into building **Sensi Fit**, a laser motion tracking system designed to give athletes and coaches a more complete picture of training progress.

Sensi Fit's hardware-enabled SaaS platform uses a compact sensor to capture an athlete's movement in 360 degrees without requiring wearables, markers, or a Wi-Fi or Bluetooth connection. Paired with a proprietary app, the system delivers live performance data and automates the collection and analysis that traditionally leaves coaches sorting through spreadsheets, tagging video, or relying on specialized sports scientists. The result is a more accessible way for teams to measure movement, optimize training, and identify potential injury risks.

Sensi Fit brings elite performance analytics to teams at every level and across multiple athletes, sports, and surfaces—from youth teams and high schools to collegiate and professional programs. Tested in real-world pilots with groups like the WNBA and the US Tennis Association, the system offers easy setup, team-wide real-time analytics, and an online drill library that helps coaches spend less time managing data and building workouts.

Challenge

Sensi Fit already had a working prototype, but it had been developed primarily for controlled indoor environments. Taking that system onto a soccer field, track, or other outdoor surface introduced new challenges. Direct sunlight and glare from reflective windows interfered with the optical sensors, while outdoor use demanded a level of weatherproofing the indoor unit had not needed. The team needed to rethink the device from the ground up rather than simply retrofitting the existing indoor prototype.

A field-ready prototype was only part of the challenge. Sensi Fit also needed to make the redesigned system manufacturable at scale. That meant, refining the housing, sourcing the right materials and components, and building a reliable supply chain. For a small company moving from prototype to production, every component had to work not only technically, but also as part of a repeatable manufacturing process.

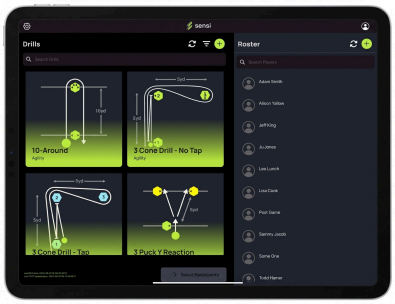
Project Details

Company:
Sensi Fit

Year Founded:
2022

Founder:
Izzy Hunter

Programs Participated In (Year):
Innovation Works AlphaLab (2024)
Robotics Factory Scale Program (2025)





The technical expertise at Innovation Works and the Robotics Factory is completely unparalleled. I wouldn't be where I am today without them."

--Izzy Hunter
Founder & CEO, Sensi Fit

Solution

When Hunter brought Sensi Fit to Innovation Works and the Robotics Factory, she had already bootstrapped the idea into a functional prototype, finding creative ways to build a product without a traditional engineering or development team. She sourced software and hardware talent through platforms like Upwork and Fiverr, managing freelance specialists and iterating on their work to push the product forward. After returning to Pittsburgh in 2023, she partnered with local firm Hellbender Inc. to develop the original indoor unit housings. On the business side, she turned to her investment banker cousin back home for early guidance on financial strategy and fundraising.

The next challenge was taking Sensi Fit outside. Moving from controlled indoor spaces to outdoor fields exposed major environmental hurdles. Sunlight, window glare, and rain meant Sensi Fit needed an entirely new, field-ready, manufacturable design. Joining the 2024 AlphaLab Gear cohort, and later the Robotics Factory Scale program, gave Hunter the dedicated engineering horsepower required for that leap forward.

The work was intensely practical. The Robotics Factory team, including electromechanical engineer **Andrew Katon** and robotics technician **Luca DeGroot**, helped Sensi Fit build a bill of materials from scratch, test sensors and materials in different conditions, and rapidly prototype components through the Scale shop. The team even tested materials on the roof of Innovation Works, using the facility and staff as test subjects. One seemingly simple component, a clear waterproof cover, became a series of iterations when Hunter discovered that it exposed the circuit boards beneath it. Using CNC equipment, the team modified the covers to obscure the electronics while maintaining their protective function. Each component went through similar rounds of testing and refinement as Sensi Fit moved closer to an outdoor system.

As a technically minded founder without an engineering background, the hands-on work at Robotics Factory gave Hunter the shop skills to build, test, and refine Sensi Fit's hardware herself. Innovation Works funding enabled continued work with partners like Hellbender, while Katon helped bridge communication with technical consultants. The Robotics Factory team also helped Sensi Fit build a bill of materials, identify supply sources, and vet manufacturing partners, laying the groundwork to scale future production. Beyond the hardware, Hunter gained access to mentors, technical expertise, and a network of founders who served as sounding boards as she refined the product, customer, and business strategies.

With electrical testing underway and third-party API integrations finishing up, Sensi Fit is on track for a full commercial launch within six months. Market demand is accelerating beyond traditional team sports, driven by inbound interest from private training facilities looking for direct-to-consumer and seasonal performance tracking. To capture that demand, Sensi Fit is launching head-to-head race testing, allowing coaches to benchmark athletes in real time. Backed by a 40-team demo pipeline, Sensi Fit is accelerating toward its next stage of growth—scaling rapidly to give athletic programs the predictive movement insights needed to train smarter and stay healthier.

Innovation Works and the Robotics Factory

Innovation Works is one of the most active early-stage investors in the country and the most active in Pennsylvania. Since its inception of the seed fund in 1999, Innovation Works has invested in over 800 companies that have gone on to raise $3.74 billion in follow-on funding. Innovation Works is part of the Ben Franklin Technology Partners network, which has catalyzed economic growth over the last 30 years by providing access to capital and networks that help foster innovation and technology-based economic development in Pennsylvania. The Robotics Factory is an array of robotics programs led by Innovation Works and the Pittsburgh Robotics Network. Learn more at **innovationworks.org** and **roboticsfactory.org**.