Case Study

3D Scanning

Beyond the Mirror: Fit:Match and RealSense Reshape the Future of Body Measurement

From Retail Fitting Rooms to Operating Rooms, this Partnership is Transforming How Industries Understand and Serve the Human Form

Spotlight on Fit:Match

Fit:Match technology, powered by RealSense sensors and proprietary AI, delivers non-invasive 3D body scanning and real-time data analysis. Its platform serves retail, fitness and wellness and healthcare, offering personalized recommendations for consumers, athletes and clinicians.

"RealSense provides the sensor technology and ecosystem to ensure accuracy."

– Fit:Match founder and CEO Haniff Brown

Challenge: Moving Beyond 2D Body Measurement

Proper fit is one of the most persistent challenges in the apparel industry. Traditional sizing systems rely on two-dimensional metrics of the waist, chest and hip — captured by a tape measure— which fail to accurately reflect the three-dimensional shape of the human body. The result: poor fit, high return rates and customer dissatisfaction. Moreover, retailers struggle to meet the needs of diverse consumers, especially in hard-to-fit categories like undergarments; research shows that 80% of women are wearing the wrong size bra.

Other fit-tech platforms use 2D optical capture, resulting in 2D images, which still lacks dimensional accuracy.

In fitness, athletes and coaches demand more than basic wearable metrics — they seek real-time, personalized shape data to enhance performance.

The stakes are even higher in healthcare. Plastic surgeons need precise 3D models for pre- and post-operative planning and to predict sizes for compression garments, which are necessary post-surgery to support recovery and enhance results. Slow and inefficient patient registration processes can discourage doctors from using device navigation systems that enable them to perform procedures with greater accuracy and precision — undermining expensive equipment investments and potentially compromising patient outcomes.

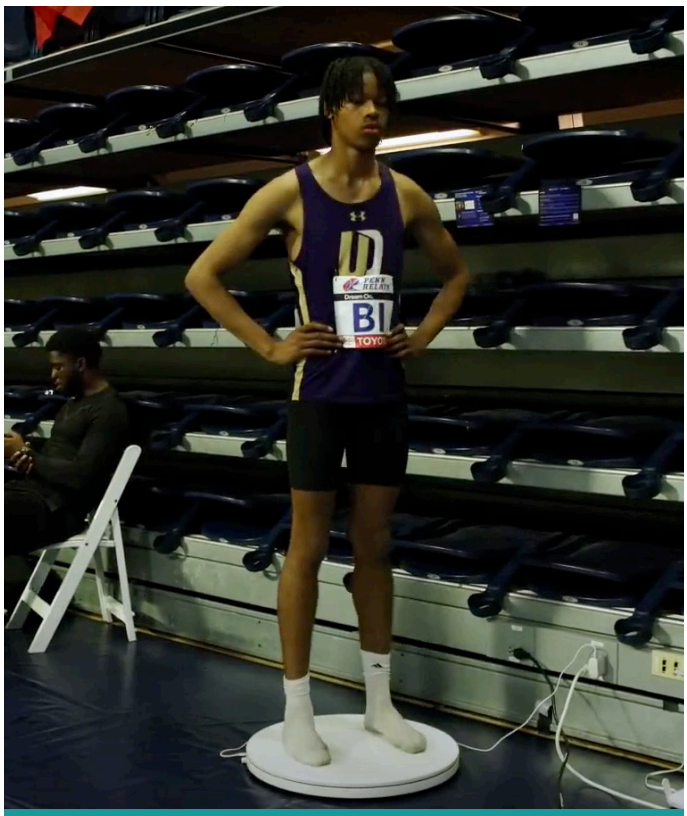
A new solution to understanding and applying body data was needed: one that delivered 3D accuracy, real-time performance, strict privacy protections and scalability across consumer and clinical environments.

Solution: The Fit:Match 3D Digital Twin Platform, Powered by RealSense

Fit:Match developed Reflect, a first-of-its-kind SaaS platform that creates digital twins of users with sub millimeter accuracy by capturing their unique 3D body morphology using computer vision — 3D depth sensors — from RealSense. Patented algorithms then match users to their closest digital twin from Fit:Match's proprietary, ever-expanding database to deliver precision fit recommendations.

"Fit:Match's Reflect technology opens the door to a 3D world where we can now match the individual's morphology to deliver extremely accurate predictions around fit," said Fit:Match founder and CEO Haniff Brown. "It's logical that four people can have the same measurements but wear four different sizes because their shape is different. RealSense provides the sensor technology and ecosystem to ensure accuracy."

Originally developed for retail, use of Reflect has since expanded to the fitness,



Athlete on Fit:Match Body Scanning Platform

athletic performance and healthcare sectors. For gym members and athletes, Reflect's 3D shape tracking provides a deeper, more detailed perspective of body transformation — beyond standard metrics, such as weight or body mass index (BMI).

Users can monitor their progress via a personalized avatar, tracking improvements in muscle mass and overall shape changes.

Reflect also addresses complex challenges in healthcare. Plastic surgeons first adopted Reflect to accurately fit post-operative compression garments. But its utility quickly grew, as it became clear that 3D body mapping could also be a powerful tool in planning and evaluating procedures such as fat grafting and augmentation.

RealSense computer vision provides the backbone — high-fidelity, real-time, privacy-centric 3D scanning — helping to enable a new standard for body mapping across industries.

Coupled with Fit:Match's AI engine, the solution delivers hyper-personalized recommendations, deployable in stores and gyms, at events and homes and across digital platforms.

The Partnership Begins: Savage X Fenty and the Fitting Room of the Future

Fit:Match's partnership with RealSense began in 2022 to support a digital fitting room solution for Savage X Fenty. The solution had to be fast, highly accurate, ultra-private, completely secure and seamless for in-store use.

Fit:Match turned to RealSense for a portfolio of sensors, initially selecting the L515 LiDAR for its ability to securely capture detailed point clouds.

"The L515 LiDAR sensor's ability to collect the raw frames of the point clouds gave the retailer and the consumer a lot of confidence that their data was protected," said Brown. "Additionally, security could be handled locally, which adds a level of speed and additional privacy protection, giving retailers and consumers confidence."

By 2024, Fit:Match transitioned from the L515 LiDAR sensor to RealSense D415 stereo sensors to support diverse environments like gyms and sports venues, delivering consistent scanning results even in uncontrolled conditions.

Results: Retail Success: From Fitting Room to Checkout

The initial retail deployments weren't just innovative; they were commercially transformative. The pilot at Savage X Fenty in New York City exceeded expectations, delivering:

- **5X conversion rates:** Shoppers using FIT:Match were five times more likely to buy.
- **25% higher average order value:** Because the system eliminated sizing conversations, associates could focus on lifestyle selling and bundling.
- **Up to 80% fewer returns:** In hard-to-fit categories like bras, this was a game-changer.
- **Instant ROI:** The retailer broke even on its investment within the first weekend.
- **Expanded market access:** FIT:Match's inclusive technology increased appeal among underrepresented body types and sizes.
- **Greater loyalty:** The experience drove sign-ups for shopper loyalty programs.

Reflect also enhances online shopping through Fit:AI, an AI-powered chatbot that delivers ultra-personalized fit recommendations, boosting conversion and reducing returns across channels.

"The feedback on the consumer side has been phenomenal. Everything we do at Fit:Match is built around trust — at the consumer, retailer and enterprise level," said Brown. "If that trust erodes, then we don't have a product. In New York, customers lined up and even traveled across state lines for the experience. Our anonymous holographic twins and transparent data practices made people feel safe and excited."

Beyond Retail: Evolving into Fitness

In sports and fitness, Reflect tracks body shape evolution over time, giving coaches, trainers and scouts a new level of insight into player development, performance and injury prevention. Professional teams use Reflect to uncover shape-based data that previously took weeks to gather. The platform is expanding to schools and across multiple sports like football, baseball, soccer and track.

Healthcare Advancement: Reflect + RealSense in Plastic Surgery

Fit:Match's Reflect platform found powerful applications in aesthetic surgery. Plastic surgeons now use it for:

- **Garment fitting:** Accurately fitting post-op compression wear for better recovery.
- **Clinical use:** Helping surgeons visualize outcomes,

optimize fat distribution and track healing over time.

- **Evaluating fat grafting results,** such as fat survival and swelling reduction.

The 3D data generated by RealSense's depth sensors helps answer critical questions: How much fat survived the graft? Is swelling reducing as expected? Is the body evolving according to plan?

"In fat grafting and augmentation, we're answering questions that were once guesswork, with data," said Brown. "Doctors can now see exactly how the body is evolving post-surgery."

What began as a tool for garment fitting has evolved into a full platform for procedural planning and evaluation. Reflect's impact has been profound, creating new levels of confidence for both patients and clinicians.

Biomedical Breakthrough: Faster, Smarter Surgery

Traditionally, matching a patient's anatomy to pre-operative CT or MRI scans for navigation systems takes over six minutes, leading some surgeons to abandon these tools altogether; Fit:Match's RealSense-powered registration system cut the setup time to just six seconds. This single improvement unlocked:

- **Increased usage of surgical navigation systems**
- **Improved patient safety and surgical precision**
- **Surgeon satisfaction** by reducing technical frustration
- **0.4mm scan accuracy,** built on RealSense's native fidelity and enhanced through FIT:Match's proprietary optimization layers

This use case required custom tuning of RealSense D405 sensors for handheld surgical workflows.

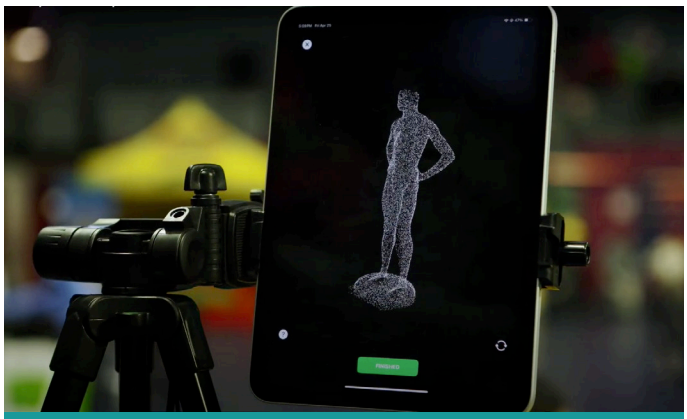
Looking Ahead: AI, Computer Vision, Data -- and the End of the Size Chart

Fit:Match is building a future where body shape — not size — guides design and care. Its vision includes:

- **Partnering with clothing manufacturers** to improve product design and reduce material waste using anonymized shape data
- **Supporting GLP-1 users and wellness clients** in tracking shape changes over time
- **Becoming the "fit hub,"** offering a universal 3D fit passport across multiple brands and retailers, online and in stores.
- **Powering remote healthcare** with accurate at-home body scans

RealSense technology is essential to this vision,delivering consistent, high-quality scanning whether in clinics, homes or athletic venues.

As AI and 3D imaging move from buzzword to baseline, Fit:Match and RealSense are leading the forefront, proving that fit is no longer guesswork, but data-driven science.



Fit:Match Body Scanning Interface

Learn More

- **Fit:Match**

https://www.fitmatch.ai

- **RealSense Technology**

https://www.realsenseai.com