



BUSINESS PLAN CHALLENGE

Student's 3D-printing idea could help people with feet problems

BY STEPHANIE BRITO

SBRITO@MIAMIHERALD.COM



MAY 08, 2016 08:19 AM, UPDATED MAY 09, 2016 07:25 PM



High school student Marco Fernandez, right, with makerspace co-founder Daisy Nodal work together at Moonlighter Makerspace in Wynwood. **ROBERTO KOLTUN** RKOLTUN@ELNUEVOHERALD.COM

When Marco Fernandez realized that commercial insoles weren't helping his flat-feet problems, he decided to work on a more customized insole product — using 3D scanning and printing techniques.

By continuing to use this site, you give your consent to our use of cookies for analytics, personalization and ads.

Marco, who's 16 and a junior at Miami-Dade County's School for Advanced Studies at Miami Dade College Wolfson Campus, has suffered from a flat-foot problem all his life. The problem has affected his performance in soccer, where he is currently in the regional pool for the state team.

"In my younger years, [my flat-feet problems] weren't as prevalent. But then I was starting to get injuries in soccer, and it was hurting my feet and my calves," he said.

Digital Access For Only \$0.99

For the most comprehensive local coverage, subscribe today.

SUBSCRIBE NOW

#READLOCAL

Marco had spent a lot of time at a makerspace called Moonlighter in Wynwood with his sister, Alessandra Fernandez, 18, a senior at New World School of the Arts, who was working on some art pieces.

He realized that he could use the same 3D scanning and printing techniques he saw at the makerspace to create a more accurate insole product for himself.

"Once I found the solution to what was my problem, I thought, 'Why don't I help others with the foot problems they're having?'" Marco said. "Companies in the market aren't helping people with the problems — they just have general insoles."

He approached the staff at Moonlighter, who were finalists for the [Business Plan Challenge in 2014](#), about his idea, and they connected him with Dr. Richard Santo Mallia, a podiatrist with a master's in public health from FIU. The two shared their ideas and decided to join forces to create Digifeet, a company that connects podiatrists, designers and patients to create a custom insole.

"He has a lot of enthusiasm, and he's very bright. I can see where he's going with this, and I really believe in what he's doing," Mallia said about working with Marco.

By continuing to use this site, you give your consent to our use of cookies for analytics, personalization and ads.

Marco, with Mallia's mentorship, then compiled the idea into a business plan and submitted it to the Miami Herald Business Plan Challenge High School Track, which attracted 104 entries this year — and he won.

HOW IT WORKS

Patients looking for a custom insole would find out about Digifeet from either a mobile application or from their podiatrist. Patients would then scan their feet using a 3D scanner and send the scan to a designer who would then create a 3D image of the insole to print. The cost would be \$95 plus shipping for the insole.

Doctors can purchase either a monthly or yearly package with 3D scanners. For \$1,600, the monthly package includes a 3D scanner on lease, 3D scanning training and tech support. For \$18,000, the yearly package includes a 3D scanner, two 3D scanning trainings and tech support.

On the mobile application, patients can find podiatrists who have 3D scanners. Once patients go to an appointment, the podiatrist will determine whether the patient has a foot problem.

If they do, the doctor will scan the patient's foot and send the file, along with information about the patient's foot, to a 3D designer, who would then design the insole. After the doctor approves the design, the insole would be sent to print at a 3D printing hub and delivered to the patient's local doctor.

PROGRESS

Right now, the team is working on creating a prototype for the insole by taking 3D scans of Marco's feet and other patients with feet problems. The team is also working on getting more doctors on board with the project.

One of Marco's goals is to get Digifeet covered under insurance.

“We're trying to see if insurance could cover the appointment because that would be huge. Realistically, a lot of people who have foot problems are older, and if it could get covered by insurance, it would save a lot of money,” Marco said.

By continuing to use this site, you give your consent to our use of cookies for analytics, personalization and ads.

Since they're still working on prototyping, the team hasn't looked into patents yet, but they intend to file for one once they create the app.

When creating Digifeet, one of the biggest challenges the team faced was creating a unique product. Other companies do make insoles, but 3D scanning is the ultimate way to make custom insoles, Marco said.

Another major challenge the team has faced is time: Both Mallia and Marco have full schedules.

"Whenever [Mallia is] available, I'm ready to work with him. He's full of energy," Marco said. "This is definitely one of my priorities right now. He has so much knowledge on the topic."

Despite that, the team makes an effort to meet and work on the project because they are both certain that it will be a success.

"I think that if [Marco] doesn't come out with it first, someone else is going to come up with one later," Mallia said.

Marco plans to go to a college where he can continue to pursue entrepreneurship. He mentioned Brown, Columbia and Wake Forest as possible options. In his free time, Marco loves being active; he teaches karate classes and received a black belt when he was 12.

 **Comments** 



By continuing to use this site, you give your consent to our use of cookies for analytics, personalization and ads.



Young entrepreneurs explain the idea behind "Smart Straws"



Young entrepreneur explains the idea behind "Micki's"

VIEW MORE VIDEO →

TRENDING STORIES

As Miami Dolphins' coaching search continues, momentum builds for this candidate

JANUARY 07, 2019 04:46 PM

What evaluators say about top QB Haskins and what it might take for Dolphins to get him

JANUARY 07, 2019 05:14 PM

By continuing to use this site, you give your consent to our use of cookies for analytics, personalization and ads.

Miami Dolphins narrow candidate field as crunch time approaches

JANUARY 07, 2019 10:48 AM

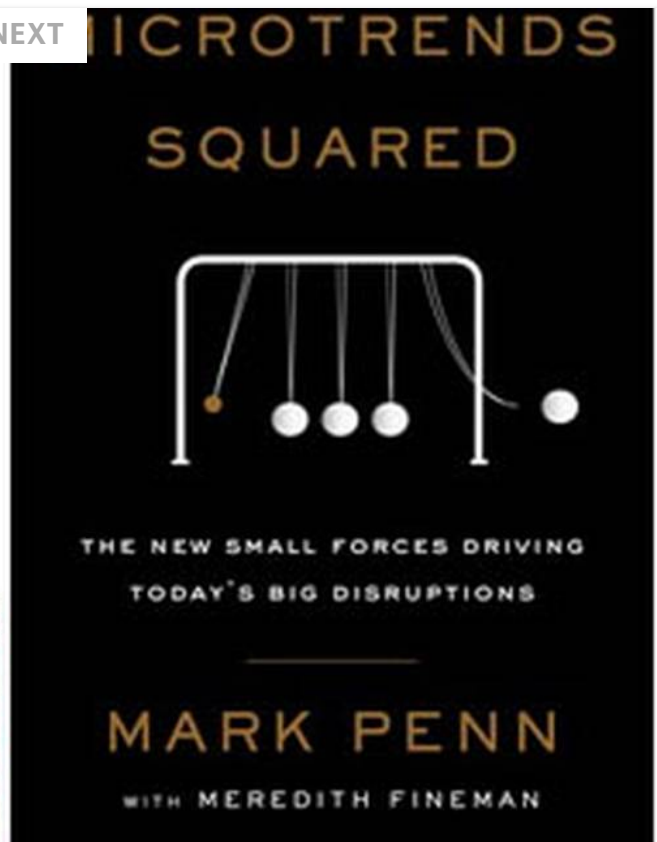
From 'empty and dark' to happier than ever. Miami's ESPN star Dan Le Batard on life at 50

JANUARY 06, 2019 10:51 AM

Another stretch of cold weather is on the way. Are you ready for the 50s, Miami?

JANUARY 08, 2019 06:30 AM

READ NEXT



BUSINESS PLAN CHALLENGE

What will drive your next business success? This speaker will tell you May 10

BY JANE WOOLDRIDGE



MAY 07 2019 01:22 PM

By continuing to use this site, you give your consent to our use of cookies for analytics, personalization and ads.

Mark Penn, author of "Microtrends Squared," speaks at a free Miami Herald event May 10. Winners of the 2018 Miami Herald Business Plan Challenge will also talk about their winning plans.

KEEP READING →

DIGITAL ACCESS FOR ONLY \$0.99

#READLOCAL

For the most comprehensive local coverage, subscribe today.

SUBSCRIBE NOW

MORE BUSINESS PLAN CHALLENGE



By continuing to use this site, you give your consent to our use of cookies for analytics, personalization and ads.

[BUSINESS PLAN CHALLENGE](#)

And the 2018 Miami Herald Business Plan Challenge winners are

MAY 03, 2018 09:28 PM



BUSINESS PLAN CHALLENGE

This online platform links minority small businesses with consumers. The key is quality.

MAY 03, 2018 08:28 PM

By continuing to use this site, you give your consent to our use of cookies for analytics, personalization and ads.



BUSINESS PLAN CHALLENGE

Not every athlete can afford a top trainer. That's where VDrill comes in.

MAY 03, 2018 07:41 PM

By continuing to use this site, you give your consent to our use of cookies for analytics, personalization and ads.



BUSINESS PLAN CHALLENGE

Even vacations can be hell for autism families. A new website is here to help.

MAY 03, 2018 09:23 PM

By continuing to use this site, you give your consent to our use of cookies for analytics, personalization and ads.



TAKE US WITH YOU

Real-time updates and all local stories you want right in the palm of your hand.



MIAMI HERALD APP →



VIEW NEWSLETTERS →



SUBSCRIPTIONS

Start a Subscription

By continuing to use this site, you give your consent to our use of cookies for analytics, personalization and ads.

[eEdition](#)

[Vacation Hold](#)

[Pay Your Bill](#)

[Rewards](#)

LEARN MORE

[About Us](#)

[Contact Us](#)

[Newsletters](#)

[News in Education](#)

[Public Insight Network](#)

[Reader Panel](#)

ADVERTISING

[Place a Classified](#)

[Media Kit](#)

[Commercial Printing](#)

[Public Notices](#)

COPYRIGHT

COMMENTING POLICY

PRIVACY POLICY

TERMS OF SERVICE

By continuing to use this site, you give your consent to our use of cookies for analytics, personalization and ads.