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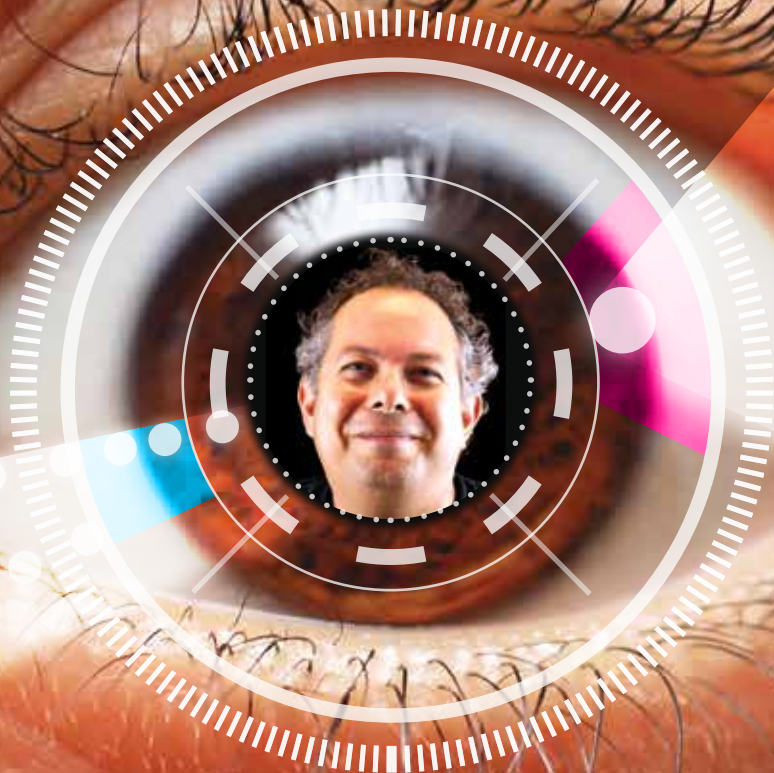
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\$500-Million Man

Blue-chip investors are betting a half-billion dollars on Rony Abovitz's 'augmented reality' technology. ⁷⁶



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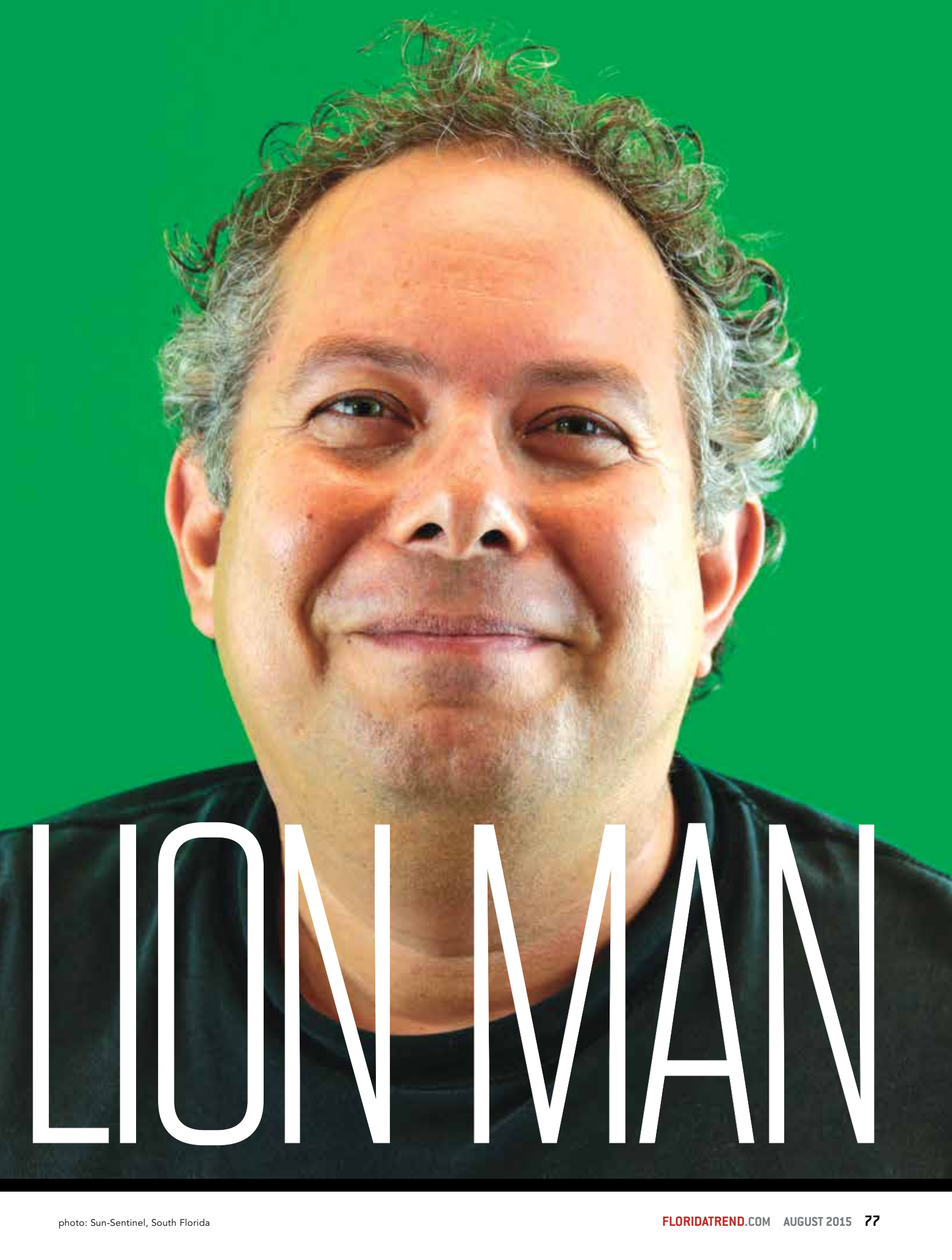
**Best Companies
to Work For** ¹¹⁴

Blue-chip investors are betting half a billion dollars on an indie-rock guitarist and science fair geek with a secretive 'augmented reality' technology company just south of the Fort Lauderdale airport.

By Mike Vogel

FLORIDA'S

\$500-MIL



LIONMAN



“I love it here: Disney, NASA, alligators! NASA brought the best and brightest here in the '60s to go to the

In black pants, a black shirt over his spreading middle, a black skullcap atop his graying hair, Rony Abovitz marks a point in the air with his hand. “There’s like a line where you’re not OK, and there’s a line where you’re normal,” he tells University of Miami engineering students and faculty. To succeed, he says, you need somebody on your team who’s just a couple shades shy of the “not OK.”

“The people who have really made it are not thinking normally,” he says.

Abovitz is clearly happy to be out there near the “not thinking normally” line. Normal or not, he’s now backed by Google and other tech heavyweights in one of the biggest venture capital deals ever. And he wants all of us to join him in a world where laptop and smartphone screens are unnecessary and everyone computes via tiny projectors that shine images onto their retinas.

The few who’ve seen inside Magic Leap, his company, come away as though they’ve had a religious revelation. Abovitz, who talks of building an Apple-sized company based in south Florida,

Definitions

► **Virtual Reality:** Through a headset, the user is completely immersed in an artificial environment that blocks out the real world. Menlo Park, Calif.-based Oculus Rift, now owned by Facebook, and Sony are leading developers of virtual reality technology.

► **Augmented Reality:** Headgear allows the user to experience a mix of the real world and virtual images that the technology imposes into it. Microsoft HoloLens and Magic Leap are the leading companies working with augmented reality technology.

tells the UM engineering students to ask what he asks himself: “Am I rocking the world?”

Rony (rhymes with Tony) Abovitz came into the world in Cleveland 44 years ago, born to Israeli immigrant Isaac Abovitz and his wife, Itta. When Abovitz was a boy, the family moved to Broward County where his father (now deceased) went into real estate. Abovitz’s sister, Mindy, now editor-in-chief of a magazine for women

drummers, told *Business Insider* of a childhood of family sing-a-longs and creativity.

A self-described “science fair geek,” Abovitz dreamed at age 10 of being a *Star Wars* pilot, playing for the Miami Dolphins and doing something “really cool” in science and engineering.

At 19, he went to Israel to fix military jeeps and build fences as a volunteer replacement for Israeli soldiers on leave. His parents convinced him to go to the University of Miami where, he told engineering students there in February, he “drank the whole university up.” He ran for student government and wrote essays and a cartoon strip, “Of Lice and Hens,” for the student newspaper.

One day, he says, “I wake up having a dream of throwing a javelin.” Waking from a dream is a theme that runs throughout Abovitz’s biography. The track coach turned him away. With no natural talent but “insanely obsessed about making it,” Abovitz trained on his own, returned the next year, persisted through a vomit-inducing workout and made the team.

He spent eight years at UM,

Magic Leap's technology is still largely a mystery. The firm's website provides a glimpse of what users might experience — virtual images imposed into what they see in the real world, projected directly onto their retinas.



moon — there is something about being here which gets you to think different and big.” — *Rony Abovitz*

earning a bachelor's in mechanical engineering in 1994 and a master's in biomedical engineering in 1996. He worked for an orthopedic implant business and, in 1997, co-founded a company called Z-Kat to make robots to assist in medical surgery.

Abovitz demonstrated an ability to sell people on his vision. After reading in *Popular Science* about a Northwestern University robotics researcher, he went to Illinois and convinced faculty member Michael Peshkin and a graduate student to become Z-Kat co-founders. Peshkin, who remains a Northwestern professor, says that at Z-Kat there was “never enough money,” but “it was a very scrappy company.”

The Sept. 11 attacks killed a \$50-million funding round and tested Abovitz's leadership. Employees went without salaries, and Abovitz hit the road to raise money, with a prototype robot in a van. “You have to be insanely tough,” he told UM students. (Abovitz, over a period of months, turned down FLORIDA TREND interview requests. The UM talk is on YouTube.)

In 2004, entrepreneur Maurice Ferré, who had started and sold

an image-guided surgery company to GE, became Z-Kat's CEO. Z-Kat spun off a new company to focus on minimally invasive orthopedic implant surgery, Mako Surgical, based in Davie in south Broward, with Ferré as chairman and CEO. A Mako financial presentation, to Abovitz's delight, once included a picture of Jimi Hendrix on every slide.

Mako went public in 2008. Abovitz held no board seat and didn't own more than 1% of Mako, according to securities filings. His name doesn't even appear in the annual reports for 2011 and 2012, the year he became an adviser to the company. But his credibility as a tech company founder who could deliver a large return was cemented in 2013 when Ferré led the company to its sale to Michigan-based orthopedic device seller Stryker for \$1.65 billion.

Post-Mako, Abovitz noodled what to do next. He's offered at least three versions of how he came to found Magic Leap.

In one, he cited September 2011, when Island Records founder Chris Blackwell invited him to his GoldenEye resort in Jamaica, the



Abovitz has a band, SparkyDog & Friends, which the band's website describes as a “wonky” group traveling “across space and time in our heavily modified space bus.” The release of an album — produced by England's Mick Glossop, who has worked with Frank Zappa and Van Morrison — has been “delayed by a black hole,” says the website. A cartoon series on the site was done in part by Andy Lanning, who co-created the “Guardians of the Galaxy” comic for Marvel.

“Engineers and business students don’t focus enough on being creative. Like, go take art class.”

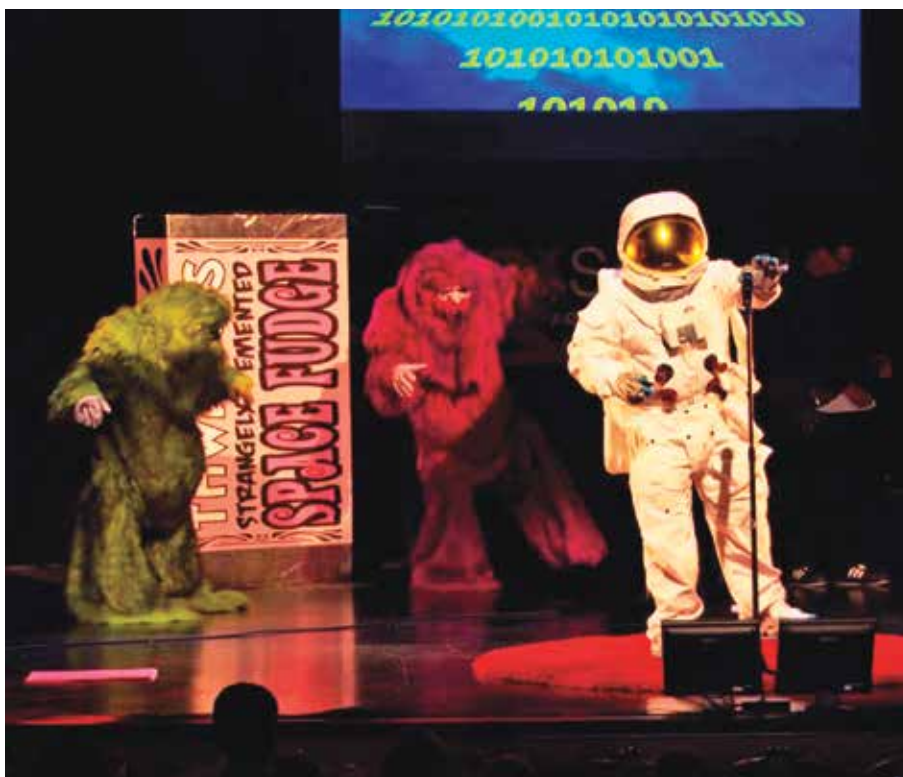
former estate of author Ian Fleming. Abovitz saw people around him looking at their phone screens instead of the stunning natural surroundings. “I thought, ‘I don’t want that anymore.’ And so I realized computing had to change,” he said.

In another version, Abovitz told the *MIT Technology Review* of his frustration at Mako with the head-mounted displays then available — “just complete crap,” he said — and of talking with high school friend, SparkyDog band mate and inventor John Graham Macnamara (now senior creative scientist at Magic Leap) about the difficulty of making a hologram appear.

Abovitz woke to a solution: The answer isn’t to project a hologram into the middle of a room so that all can see it but to project an image directly into each individual’s eyes.

In a third telling, from his blog in 2010, he says he started Magic Leap Studios to make films based on a graphic novel. He traveled to New Zealand to Weta Workshop, the entertainment effects company for the *Lord of the Rings* films, and struck up a relationship with Weta co-founder and five-time Oscar-winning design and special effects supervisor Richard Taylor. Magic Leap was incubated at Weta, Abovitz said.

Abovitz hasn’t been as loquacious about what Magic Leap’s got. In several venues and in his



In 2012, when Abovitz spoke at the inaugural TEDTalk conference in Sarasota on “The Synthesis of Imagination,” the presentation consisted of two figures dressed in shaggy-dog style costumes paying homage to a giant bar of “Space Fudge” as a techno rendition of the theme from “2001: A Space Odyssey” played.



Alan Eustace, a senior computer scientist at Google, told friends in the tech world that Magic Leap has something “insanely awesome.”

talk this year with UM students, he revealed nearly nothing.

Meanwhile, however, Magic Leap’s secretive work drew powerful friends. In 2014, Alan Eustace, a senior Google computer scientist, visited. Eustace, a University of Central Florida grad, is better known for setting, in 2014, the record for the highest altitude free fall jump from 25.74 miles up in the stratosphere. Abovitz says Eustace sent an “epic email” to important people that Magic Leap had something “insanely awesome.”

“He’s why we get funded,” Abovitz says. In 2014, Magic Leap received \$542 million from Google, Qualcomm, Legendary Pictures (the studio behind the Batman trilogy and Jurassic World), Kleiner Perkins and others.

Kleiner Perkins’ executive Bing Gordon wrote, “I’ve never seen anything with more breakthrough promise than Magic Leap.” He called Abovitz “the kind of fabulous, charismatic, mind-bendingly creative entrepreneur about whom books are written.”

Not only was the \$542-million investment among the biggest deals of 2014, but also it ranked the fifth-biggest venture capital deal ever, ahead of Snapchat, Airbnb, Zynga and Beats Electronics (though considerably behind No. 1 Facebook and No. 2 Uber). The investment valued Magic Leap at \$2 billion.

Bob Swindell, CEO of the Greater Fort Lauderdale Alliance economic development group, says he jokes with Magic Leap people: “You guys are the current

“You have to believe you are and will attract a team that is freaking NASA, Caltech, SpaceX smart. Otherwise, why are you doing it? Smart doesn’t mean snotty.”

rock stars in town.”

The “rock stars” have attracted other stars. Magic Leap showed Graeme Devine, a legend in game development who lives in semi-retirement in Santa Cruz, Calif., a video of what Magic Leap could do. “I said, no, that is impossible,” Devine recounted in a talk preserved on YouTube. “I will come to Florida, and I will call you charlatans.” He came, saw a demonstration and signed on as games head. Google sent its No. 2, Sundar Pichai, to join the Magic Leap board. Abovitz wanted a “chief futurist” and landed sci-fi author Neal Stephenson.

While some other developers of virtual and augmented reality devices — Oculus Rift, bought by Facebook for \$2 billion, and Microsoft, with its HoloLens — have been forthcoming about their systems, Magic Leap remains “really a big question mark,” says Chris Roda, who teaches video game creation at the University of Central Florida’s graduate video game design school.

There’s a cottage industry in sifting through Magic Leap’s history, patent applications and hires for clues. *MIT Technology Review* and the *New York Times* both got a look in 2014. MIT described a towering device of lenses and electronics that made a monster seem to appear in the real world by shining light onto the retina. Magic Leap has been working to shrink the projector to something the size of eyeglasses. A smaller prototype the MIT writer saw produced less impressive images.

Abovitz said in one news release that Magic Leap would “revolutionize the way people communicate, purchase, learn, share and play.” On a Reddit’s Ask Me Any-



An illustration from the Magic Leap website shows how an image might look using the company’s technology.

thing, he said smartphone, laptop and smartwatch physical screens would no longer be needed thanks to Magic Leap’s “unique digital light-field experience.” He took a swipe at the competition’s tech as bad for people’s health.

Magic Leap has operations in Santa Cruz, where Devine lives, Los Angeles, Mountain View (Google’s base), Seattle, Austin and with Weta in New Zealand. Its headquarters, though, is on the fourth floor of the Design Center of the Americas, a showroom complex, in Broward County’s Dania Beach.

A walk along the color tiled Design Center floors, past Ralph Lauren, home décor and furnishing showrooms, leads across an atrium decorated with vibrant colored geometric art to the elevator to Magic Leap.

In the Magic Leap lobby, decorated with comic art and the



Skeptical of Magic Leap’s claims, game developer Graeme Devine visited the company and saw a demonstration. He became Magic Leap’s head of games.

Magic Leap logo, spokesman Andy Fouché takes a moment to say the company is “bursting at the seams” and, no, Abovitz isn’t available. The company is still in “stealth mode.”

Abovitz has said he’s using some of the investor money to build a 300,000-sq.-ft. pilot factory to make the “photonic light-field chip” Magic Leap needs. He hasn’t said where that plant is but, of Florida, he has said, “I love it here: Disney, NASA, alligators! NASA brought the best and brightest here in the ’60s to go to the moon — there is something about being here which gets you to think different and big.”

He’s given no launch date, but he’s set the bar high for expectations with the question he told the UM engineers to ask themselves if they wanted to pursue a vision:

“Is it going to just be insanely awesome?” 