The Most Important Social Media Company You've Never Heard Of

Damien Patton creates his own debris field. Stories swirl around him of smoldering vehicles, broken bones and shredded ligaments, a girlfriend launched "like a missile" into the Mojave Desert from the back of a dirt bike. Patton enjoys these accounts. Maybe a little too much. So it was with a mix of adrenaline and dread on my first day at his Las Vegas offices that I followed him and Stacey Epstein, his brand-new chief marketing officer, out to his truck: a Ford F150 Raptor 4x4, black as David Hasselhoff's Knight Rider rig, with a SuperCrew cab, a super-juiced engine, massive custom suspension, and special software running the whole operation. "I brought you both a helmet," he said, reassuring no one, as he drove over the curb and onto the access road to the highway leading out of town.

Half an hour later, we were doing 95 down a rutted dirt road cut into the rolling foothills, sagebrush blurring by, slowing to 50 to power through blind curves, taking out the occasional small tree. Now and then, Epstein, who's no delicate flower, let out a low warble of alarm. I sat locked in a kind of waking rigor mortis, the windows in my corner of the cab steaming up as I pressed myself into the leather. "Don't look over the edge!" said Patton, cackling as he slammed around another bend. Don't worry.

It turns out that Patton is a damn good driver. And he's not as reckless as he may seem. His biography might come across as a random walk through some highly improbable places, but there is a logic behind his recklessness: He always wanted to build something big.

Now, it appears, he has. This month--this story, in fact--marks the end of stealth mode for Patton's new enterprise software, Banjo, an "event-detection engine" poised to disrupt industries all over the world. Banjo does something no one has managed to do until now, at least not in such an elegant, intuitive fashion: It imposes order on the vast chaotic cloud of social media and unlocks its power in ways we haven't yet seen.

> "Damien figured out a way to answer an existential question," says an admiring potential investor.

Through a Playskool-simple Web interface, Banjo turns a system built around "following" people into one organized by location. It shows only geolocated public posts made from mobile devices; those posts are drawn from what Patton calls a "world feed" he's created by aggregating more than a dozen major social networks (and counting), from Twitter to Instagram to Russia's VKontakte to China's Weibo. So instead of letting your social stream simply wash over you, possibly filtered by a clunky grab bag of hashtags and keywords, you can work from the ground up, anywhere on earth. Interested in the public tweets coming out of Goldman Sachs's headquarters in lower Manhattan? There's hedge funder @norman_g sounding off about natural-gas prices. Want to hear what's happening on Weibo

around the Foxconn factory in Shenzen? Or see the many subspecies of human getting Instagrammed at this month's Star Wars Celebration in Anaheim, California? Plug in the location (plus keywords, if you want), and the map at the center of Banjo's screen resizes to the relevant scale, with all of the public posts in that area appearing as pins on the map and as cards, complete with text, photos, and video, alongside it. All this in real time.

Patton, who designed the technology and is the company's de facto CTO as well as CEO, thinks of Banjo not as a simple consumer product but as a platform, an underlying intelligence that others will come along and tap into, build on. And he's right that the implications of Banjo's technology are almost incalculable for businesses as diverse as financial services, marketing, insurance, news and media, public health, and beyond. Because it combines location, photo classification, analytics, and the ability to "rewind" each social media network in time--so you can see what happened just before, say, an earthquake struck--Banjo points the way not only to a transformation in how we consume social media but also to a huge escalation of its utility and value.

"Instead of 'How do we mine social media?' Banjo looks at it from the mobile phone, which is out in the real world," says Noam Bardin, co-founder and former CEO of Waze, who's been working at Google since the search giant bought his traffic app company for $966 million last year. "They've asked the question very differently: 'How can we know what's going on in a specific place at a specific time?' They're able to mine social media in real time."

Tom Glocer, the former CEO of Thomson Reuters and now the chair of the tech committee on Morgan Stanley's board, had a similar reaction. "Damien figured out a way to answer an existential question: 'How do I find out what's going on in the world?' " says Glocer. "I think he's sitting on a unicorn."

There are more than a few companies out there "mining social media" for "actionable business intelligence." Some of them will likely greet the news about Banjo with an eye roll, saying, "We already do that." This story will decline to make a grinding feature-by-feature comparison. But if there's a cage match coming, we can't wait.

The genius of Banjo begins with a virtual grid: more than 35 billion squares--each not much bigger than a football field--programmed as an overlay on the entire globe. Every square in that grid is monitored constantly by Banjo's software, which maps every geolocated public post made on a mobile device to any of the networks in Patton's world feed.

The software itself is Banjo's secret weapon, which Patton says is capable of performing two quadrillion-plus calculations on the "hundreds of thousands of geo-tagged mobile posts" flooding in each minute: It simultaneously does linguistic and topic analysis, geo-data analysis, and photo and video classification, as well as some 30,000 other sorts of computation. Over the past four years, the software has documented the baseline state for each square of the global grid: This one is a featureless expanse of cornfield. This one's a war zone with constant smoke and fire. Here's Times Square--expect a steady flow of profanity and people dressed like Muppets. As posts rise from these specific locations and become visible to Banjo, the software compares them with that steady state: Deviations from "normal" (for example, a sudden uptick in the word gun, or images of fire or smoke or a riot in a

normally serene area) trigger an alert back to the mother ship, where computers, aided by a handful of humans, can assess the alert and either disregard it or pass it on. (The number of humans required to monitor the system has shrunk to just a handful as Banjo's software has gotten smarter.)

It was through such an alert that Banjo found and recognized the significance of a single tweet sent just after 12:30 a.m. last November 20, from a location near the Florida State University campus in Tallahassee. Though the post contained no hashtag, Banjo's tripwire was triggered by the phrase "scared shitless," as well as by the pattern of words and the surge in Twitter and Instagram posts coming from that specific location. The software recognized the anomaly in that piece of the grid and brought it to the attention of folks at Banjo HQ--who then notified the local CBS affiliate. That channel became the first news outlet to report the wounding of three people in an FSU library shooting. This is why key media properties (including NBC and ESPN) are among Banjo's first paying customers. As one Banjo staffer puts it, "Banjo turns your laptop into a drone."

> Banjo is global, resilient, hyperlocal, low cost--or, as Patton likes to say, "badass."

If you think that sounds creepy, you're forgiven. It's not hard to imagine how Banjo could be turned to a darker purpose in the hands of an Assad or a Putin. Except for one thing: "The drone is there only when you want the drone there," Epstein, the CMO, explains. "People want to be public, or they wouldn't post publicly. And they want their location to be known, or they would turn their location settings off."

In other words, you have the power to remain invisible to Banjo. And Banjo's business model doesn't depend on learning everything about you and using that information to force-feed you advertising. All it sees is what you willingly send out onto the open airwaves; its "product" is the intelligence it derives from that content, whether it's the significance of a single image or a pattern emerging from a thousand tweets.

If you've heard of Banjo, you're probably thinking of the consumer app the company released in 2011. It's a news app, built from social media feeds. According to AppData, between seven and seven and a half million people have downloaded it. It's still alive and well. But if you look closely, Banjo 1.0 seems unfinished. And it is. On April 15, 2013, when two pressure-cooker bombs exploded near the finish line at the Boston Marathon, it didn't take long for Banjo's staff of about a dozen (there's now more than 50) to realize they were learning about events on the ground faster than reporters were--and faster even than the police. Since Banjo uses location as its primary filter, the system could ignore the global noise and drill straight down to Boylston Street. Four days later, it followed the manhunt through Watertown, block by block, via posts from people mere feet from the scene.

That horrible week showed Patton and his team that they'd built something far more powerful than even they had realized. So they left the consumer app to fend for itself and started coding Banjo Enterprise. But Banjo 2.0 owes its ability to "be" on the ground almost everywhere, at any time, to that earlier incarnation. Because each user of the consumer app signs up through a social network, Banjo can see not only all of that person's posts, but also the posts and user IDs from across his or her entire extended social graph. So its seven million-plus users ultimately link out to some 1.2 billion people,

Patton says--about one-sixth of the world's population. When you consider how many of those 1.2 billion individuals are armed with a mobile device and available to witness an event and then post an observation, an image, or a video, you begin to grasp just how far this drone can travel. It's a global, distributed, resilient, hyperlocal, low-cost information-gathering and -disseminating system. As Patton likes to say, "That's badass."

Patton is 42 years old and looks like a six-foot-tall Irish-American Cub Scout. He favors T-shirts and socks with Banjo logos, and his custom-made, all-black Patriots jersey. He is wide-eyed, laughs loudly, and swears like the sailor he once was. His reddish-brown hair is combed straight back in a widow's peak, but he wants the world to know that, despite the many years he spent down South, "I do not have a mullet."

Patton was born in Los Angeles. His mother--his hero--was a hairdresser. His father, Patton says, "built fences" and did other construction work. (Today he designs and builds high-end houses on the Hawaiian island of Kauai.) Patton's parents divorced when he was 5, and, over time, his life story became an extreme version of the standard Silicon Valley dropout tale. When he was 15, Patton determined that "high school wasn't cool, so I just decided to venture out on my own." He left his mother's home in Redondo Beach, California, and for the next two years or so lived pretty rough, hopping trains, ending up in random places with equally random people. "I lived in the underpass on a freeway, squatted in old, abandoned buildings in Hollywood," he says. Patton moved in with his dad in Hawaii in 1990, around the time he turned 18; when the U.S. went to war in Iraq early the next year, he recalls, "I remember sitting at home with my dad and watching the tracer fire on CNN. And I was like, 'That's intense. I need to go.' "

Patton did two tours with the Navy, moving up from "the lowest of the low" to overseeing sorties into Iraq from the aircraft carrier Kitty Hawk, and then to a higher post in San Diego. But by his second tour, his heart was no longer in it. "I fell in love with Nascar, by watching it on shipboard TV," he says. "The minute I saw the guy jump over the wall of the pit with a jack in his hand, I said, 'That's me.' "

Determined to chisel his way into the fraternity, Patton used his spare time in San Diego to create his own luck. He spent a year learning to weld and shape metal; attending races and schmoozing the right people; and videotaping himself changing tires, to perfect his footwork and achieve maximum efficiency. One day in 1993, he got called in to pinch-hit on a pit crew--and soon, he was in for good, ultimately rising to chief mechanic on the Lowe's Racing team. "I only found out later that Damien didn't have a whole lot of experience," says Scott Miller, EVP of competition for Michael Waltrip Racing, who met Patton early on. "He just kind of said, 'I'm gonna do this,' and went and sorta faked it for a while, learned real quick, and up the ladder he went."

> Patton blew into the Bay Area, knowing no one--and promptly won two hackathons.

That has been the pattern ever since. Once Patton set his mind to getting his college degree, it took him less than three years to graduate magna cum laude from the University of North Carolina in Greensboro. Afterward, while helping to run a software business, he set his mind to learning about

forensics--and got so good at crime-scene investigations that he ended up training the local police force. He set his mind to learning about business and before long had his first ownership stake in a company building shopping centers. Along the way, he set his mind to coding. (Apparently, he got pretty good at that, too.)

Over the next several years there was a marriage, a divorce, at least one bad car accident, the starting-up and then the selling of a flooring company, and much moving around between North Carolina, Hawaii, and Vegas. Eventually, via a dating website he'd built for his own use when he was racing (it "mined and scraped early AOL and Yahoo personals," he recalls with a chuckle), Patton met one Jennifer Peck (the future human "missile," who seems today no worse for wear), and they set up shop in Vegas. There, for the first time in his life, Patton settled down.

Sort of. By 2009, he had become fixated on mobile technology and was traveling frequently between Vegas and Boston, taking some classes at MIT, searching for inspiration for a tech company. One day he missed seeing a friend whom he served with in Iraq who also happened to be at Logan Airport. "I became infuriated," he says. "I thought: How do you aggregate the world's data to create a signal that's personalized for me? So that when there's someone of interest anywhere near me, we don't have to be on the same damn app?"

Patton resolved to do just that, and set to work on a "friend-finding" app he called Peer Compass; in 2010, in a hunt for funding, he traveled to San Francisco. While he was there, Peck called from Vegas to tell him about a small hackathon the next day. Patton showed up--and won. Emboldened, he entered another hackathon soon after, this one at Google. Despite walking in, he says, with "no team and no idea for a product," he won that, too.

As Patton is the first to point out, "no one walks in from out of town and wins two hackathons in a week. And remember, I know nobody in Silicon Valley at this point--I know the waitress at Denny's." Within a few weeks of the Google event, Peer Compass had been funded to the tune of $800,000 by Menlo Park's Blue Run Ventures, Patton's lead investor. (Banjo's fundraising total today stands at $26.4 million, mostly from Blue Run and Balderton Capital in London. According to Blue Run co-founder John Malloy, a planned $20 million-plus round later this year will raise Banjo's valuation "substantially" from the current $100 million.)

It was a heady start. Then, in March 2011, Patton went to South by Southwest. "It was the year of all the chatting apps," he says. "Now, none of them were location-based messaging apps like we had. But I hated the space. I thought we'd be the king of it. But we'd be the king of shit."

Despite having spent a sizable chunk of Blue Run's investment--and even though his app was ready to go to market--Patton marched in and told his investors he was canning Peer Compass and starting over. He let go of all but one member of the company and set out on what one Blue Run associate took to calling Patton's "walkabout."

"That April I rented a house in Moss Beach, California, in the Half Moon Bay area, this very secluded bay," Patton says. "I brought my laptop, a color printer, a couple of reams of paper from Office Depot, and markers to write on the glass. And I built Banjo in 72 hours--from zero." On June 22, the app was available in iOS and Android. "That's badass."

We get a 'game-changing' ad-tech demo every week," says Andrew Essex, sounding bored in advance. Essex, the co-founder and vice chairman of advertising agency Droga5, was scheduled to get a demonstration of Banjo that afternoon. He had already met Patton and found him interesting, but wasn't exactly panting with anticipation.

Later that day, however, when I wrote to ask how the demo had gone, Essex responded with a string of emoji: all thumbs-ups and money bags. The next morning he told me there was now "a distinct possibility" Droga5 and Banjo would be in business together even before this article came out, completing a perfect 180 literally overnight.

"The idea of tracking visual data through the social Web--that's what people are becoming concerned with," Essex says. "When you're talking in pictures, how do you listen?"

Essex wouldn't name the companies he's met that claim to have solved this conundrum, but it was clear Banjo had shown him something radically new. " 'Social listening' is a fledgling field," he says, "but 'visual listening'--what Banjo is doing--is a field that's really not even born yet. The implications are staggering. And if you overlay location with that, then you're into some pretty remarkable intel. That you can measure it, that you can codify it, is head-spinning."

Banjo's "visual listening" capability is a function of what seems to be a major step forward in photo classification technology. Banjo asked me not to reveal certain elements of its solution, and I am certainly no expert in the field, but Patton's nontechnical explanation goes like this: Banjo combined two analytical techniques that "never would have been mixed before--and because we mixed it, it unlocked a 'Holy shit!' "

Image classification is a field in which Google has toiled for years. It recently announced that it had developed software with Stanford that can describe the entire scene depicted in a photograph, thanks to a combination of visual classification and natural language processing. Still, a key Google executive doesn't even try to hide his admiration for what Banjo has achieved. "I can't comment too much on photo recognition," says Waze founder Bardin. "But in general, the biggest problem is defining the question you want to ask." And what's unique about Banjo, he continues, is "they can ask the question better than anyone else: 'What is happening in the world that's different, right now, at this location?' That allows them to take out of the analysis the 99 percent of the data that is not relevant."

Judging by the reactions of people like Bardin--and just seeing for myself how Banjo appears to extract even fragmentary images of, say, the Coca-Cola logo from a deluge of social media posts--the photo classification does seem powerful in the extreme. And it seems to work instantly.

Banjo's chief data scientist, Pedro Alves, is a 32-year-old Mensa member who's finishing a computational biology PhD from Yale. Sitting in a conference room in Banjo's engineering cave in Redwood City, California, he says that before Banjo cracked the photo classification problem, it got a quote from a service offering to scan the photos flowing through Banjo's system. The service wanted $360,000 per day to look for a single object--like a dog or a car. The system he and his team subsequently built, Alves says with a smug smile, costs "a few hundred" dollars a day. "Let's put it this

way," adds Patton, grinning: Labor costs aside, "it's less than $1,000 a day" to run "all the technology that you've seen. That's pretty badass."

Banjo investor John Malloy expects revenue to grow by a factor of 20 this year.

Companies in stealth mode rarely generate revenue; Banjo Enterprise pulled in "less than $1 million" in 2014, according to Blue Run's Malloy. But that was just in the second half of the year--through word of mouth, with no sales team. Malloy says he fully expects Banjo to grow by a factor of 20 this year. One senses he thinks that estimate may be very low indeed. Malloy, who was, famously, the first investor in PayPal, says he thinks Banjo "could be at least as big an opportunity."

Several of Banjo's customers declined to comment for this story. But Banjo put in an appearance at this year's Super Bowl, powering the social media streams for Bud Light's House of Whatever, a massive Millennial-baiting frat party, and curating and serving images to Anheuser-Busch's various digital advertising platforms. "It also allowed us to become a customer service center," says Nick Kelly, who leads communications for the brand. "We could see what was working, what issues we had--'This line is too long' or 'I love this concert.' "

Banjo's applications in media are the most developed. Sinclair Broadcasting, a publicly traded company encompassing 162 television stations in 79 markets, had nothing but praise for Patton and his work: "Banjo has allowed us to enhance our coverage across all screens in a very fluid and easy solution," says Rob Weisbord, COO of Sinclair Digital Group. He says Sinclair now uses Banjo in eight of its TV stations and plans to roll it out to more. "I think Damien's only scratched the surface of what he--and we--can do."

Banjo allows news operations to perform several feats they could not previously. Once alerted by Banjo about a breaking story, a news director can then use the software to "travel" to the scene--an accident, a snowstorm, Egypt's Tahrir Square--and see exactly what's being publicly posted there. Because Banjo couples its map with a chronological stream of all those posts, complete with photos, videos, and user handles, it effectively offers up a menu of sources and images and a running commentary on events as they unfold; with a single tweet or message, the news desk can contact the authors and get permission to use their pictures or put them on the air to comment--almost instantly, without a reporter on the ground. What's more, by using a simple slider at the bottom of the screen, users can "rewind" time, to watch the minutes or even days leading up to a watershed event. Weisbord's team recently used that feature to pull together an album of images and video from the time leading up to the Charlie Hebdo attacks in Paris. "No one can relive the quiet moments" before an incident in that way, he says, adding that Sinclair was then able to syndicate that newscast to its licensees. "It's very cost effective."

Yet finance, as Patton well knows, is one of the juiciest potential uses for Banjo. He says he has been approached by several big-name firms looking for an exclusive license, but that he has declined to do any deals yet, moving carefully to ensure that his strategy is bulletproof. (Patton also insists that Banjo won't do exclusives.)

In a Flash Boys world where fractions of a second can mean millions of dollars, it's hard not to wonder what kind of chaos Banjo will unleash when it does get into the financial market. As part of his standard PowerPoint deck, Patton has a slide showing four images of a Saudi Arabian diesel pipeline fire last November; a second slide graphs the interval between the instant Banjo says its photo classification algorithms flagged the incident and the moment trading desks started factoring it into the price of oil: 52 minutes. By the time the first media reports began appearing, almost two hours after Banjo's alert (they incorrectly reported that a crude oil pipeline had blown), the price of Brent Crude futures had risen $2 per barrel.

"A $2 move in the price of oil? That's crazy big," says Glocer, the Morgan Stanley board member. "If you had a 10-second lead on a likely 10 cent move in the price of oil, you could trade and make a lot of money."

> The potential for Banjo's technology is "really insane," says one marketer--but he also calls it "sort of spooky."

Glocer, who now runs his own fund, is not an investor in or formal adviser to Banjo, although he hopes to put in money eventually. He is convinced that Patton's "unicorn" will be become a powerhouse in financial services, likening Banjo to a Bloomberg terminal, which, he points out, "people pay $25,000 apiece for [annually] in order to have a constantly updating feed of what's going on in the world."

Glocer can't resist throwing out a few hypothetical numbers. "There are tens of thousands of financial firms," he says. "Let's just assume that 200 of them would pay a million dollars a year each to have Banjo. That's a good business--from just the finance vertical, for a product with a lot of other applications." He goes on to point to other promising verticals like pharmaceuticals and insurance. ("Would they like to see if someone walked away from a supposedly debilitating crash? I think they would!") He notes that in "an Internet of Things world, all those sensors and cameras" could supply Banjo with new, rich streams of data. Patton says the National Weather Service has already approached him about building out an alert system. The list of potential applications just seems to unspool forever.

And Banjo will grow even more powerful as its models learn, as its algorithms improve. Alves, the data science savant, says Banjo is starting to recognize the underlying patterns that should lead to some predictive capability: "Usually with a planned event," he says, "we can detect those things an hour and a half, two hours before they start."

The marketing and campaigning potential for such a technology is really insane," says Ryan Davis, a social media strategist and marketer who has worked for several political campaigns as well as at Blue State Digital, the force behind President Obama's groundbreaking social media offensive in 2008. "But I think there's going to be a little bit of pushback from privacy people and even the general public." Davis was familiar with Banjo 1.0 from his days as a vice president at Vocativ, a website that analyzes social media data to surface news stories; he calls my description of Banjo Enterprise "exciting--and sort of spooky."

Patton says he has no intention of doing business with the clandestine agencies of the U.S. government. "I don't think those agencies could fucking deal with someone like me," he says, sounding like he might be right. Besides, he adds, Banjo has been obsessive about engineering privacy protections into the product, including a patented method for routinely cycling through its databases to scrub any posts that have been pulled down or turned private by their authors. "When a politician sends out pictures of himself in a moment of mental lapse, then goes back days later to try to delete it, it's too late--it's out there," says Patton. "Banjo is different. You change your privacy settings, and we delete it [retroactively]. It's out of our system. And it's out of every one of our customers' systems--immediately."

That's impressive and encouraging. But, as Davis puts it, "if some little company with $20 million can build this technology, our government can too." If that's true, and if that version could see more than the public messages we willingly put out there, we may have reason to worry. But it is hard to imagine that any company would start from scratch to re-create Banjo. The hairiness of the problem--pulling together so many disparate networks, gathering a user base, the photo classification challenge, building the geolocation software and the event-detection algorithms, and so on--seems daunting enough to scare off most logical contenders.

"I'm fairly certain," says Patton, "based on conversations I have had with all of those companies, that none of them are building it--and that there's a huge interest in what we're doing. Is Google going to go change their business model for this? Is Facebook? No. Those companies acquire companies." And even if they managed to replicate what Banjo is now, he adds, "where would we be by then?"

Besides, he says, "I prefer to think about the positive uses of Banjo."

Patton says he has already received offers to buy his company, even before the wrappers have officially come off the software. So far, he's turned them all down. "I've never even been a slight yes, and there's been real money on the table," he says. "Nothing has been big enough."

Nothing, that is, has been sufficiently badass.