

AR is Going to Kill the Map's Blue Dot

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On why augmented reality — not Bluetooth beacons or Wi-Fi fingerprinting — will finally deliver indoor wayfinding.

Remember the first time you used the handy-dandy map app on your smartphone? The magic of the blue-dot and step-by-step directions has undoubtedly changed the way we think about navigation, the physical world around us, and it has also given life to a new layer of location-aware experiences and conveniences.

A growing number of technology companies are jumping at the opportunity to improve the experience of navigation and wayfinding. We've seen many impressive concepts — including Google's recently unveiled AR directions for Maps, and AR-powered wayfinding apps by American Airlines and other major airports around the world. Even the formerly glorious AR unicorn Blippar threw its hat in this ring before going bust, and it's inevitable that someone will finish what they started.

Last year in VentureBeat, I shared new ways to overlay educational content, and my company Cuseum has since studied the impact AR has on learning and satisfaction. Most recently, our eyes have opened to how AR can be used to guide us, literally, step-by-step through our favorite labyrinths of culture. These ideas transcend the conditions of museums, and could apply to just about anywhere — malls, airports, hospitals, offices, and beyond.

Let's get lost

As Mark Twain once wrote “the compass in my head has been out of order from my birth.” For most of us, it's easy to get lost. No one enjoys being disoriented, especially when time matters. According to a recent study from The Manifest, “over three-fourths (77 percent) of smartphone owners regularly use navigation apps.” It's clear that people have grown increasingly reliant on these tools, but indoor wayfinding has historically been a tough nut to crack and hasn't yet emerged as a ubiquitous amenity.

In the case of cultural tourist attractions, if we can overcome and eliminate common navigational challenges, would we then be able to further free the mind of visitors, squash feelings of anxiety, and position them to focus on what they really want to learn about — the culture and history they're there to see?

For travelers, if we had all the time in the world to roam the halls of the world's greatest cities, museums, landmarks, and attractions, wouldn't that be great? But in the real world, we're all restricted by time and tight itineraries when we travel. More often than not, those ol' printed brochures and signs are difficult to make sense of, and the majority of indoor wayfinding tools still lag behind.

Moving past the ways of the past

Historically, indoor positioning and indoor wayfinding have come with enormous technical challenges: expensive hardware, Wi-Fi fingerprinting, or densities of Bluetooth beacons. Few places have the resources or funds to take that plunge; otherwise, every place we visit could surely provide indoor navigation. Along with the capital investment in infrastructure, you're at the mercy of volatile radio waves and interference.

But today, we're rounding the corner. Tech giants like Google and Apple are making digital carbon copies of the physical world and building up comprehensive visual and point cloud databases. On-device machine vision is faster and easier than ever to tap into, and as a result, new approaches to positioning and wayfinding are beginning to emerge.

Not long after our first developments at the intersection of augmented reality, image recognition, and machine vision, we looked into how the marriage of these powerful technologies could be leveraged to assist in leading people from point A to point B. A new approach to indoor navigation not dependent on Wi-Fi nor beacons.

Which way do I go?

Imagine just holding up your smartphone and being guided in a way that is simple, reliable, and borderline delightful.

A glimpse of the future

For years, developers have been trying to bring simultaneous localization and mapping services indoors, without much ease or success. They slammed into different complex technologies, but one thing remained constant — the insistence on the blue-dot approach. And it's no wonder. Real-time navigation was one of the fundamental pillars of the mobile experiences. It cemented the smartphone as much more than just a phone, an all-in-one tool to discover and interact with the world around us. But, it turns out that indoor location requires a different path, and this new way forward is opened up by new advancements in machine vision, spatial computing, and, of course, augmented reality. With AR, we can paint a dynamic, digital layer over any space in the physical world, be it a layer of fun, education, or utility. We can leverage this technology to make some places more fun, and others less intimidating, and easier to navigate.

Over the years, I've worked with pretty much every indoor location technology out there. This is why I'm so energetic and confident in this collective bet on AR. AR is bringing richer, location-based experiences to every type of environment. It is following us indoors and helping us conquer age-old navigational challenges. The formerly mighty blue-dot will no longer play a role in our lives the way it once did. With the new possibilities unleashed by AR, the experience of tapping into navigational tools is elevated to new heights to help us all enjoy the magical yet complex places we find ourselves. Gone will be the days of difficulty finding our seat in the arena, an aisle in the grocery store, or special gallery at the museum. Now — we can stop getting disorientated in unfamiliar spaces and start getting lost in exploring them.

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