

# Traplight Games



**Player ID:**  
Valtteri Pirttilä

**Classification:**  
Lead Server  
Programmer



Player profile

## Player history

With a career spanning broadcasting and games, Valtteri Pirttilä brings versatility and vision to his role as lead server programmer with Traplight Games, a Finnish indie studio that's turning heads with its engrossing free-to-play mobile strategy games, Battle Legion and Big Bang Racing. Before joining Traplight seven years ago, Valtteri gained server-side expertise at THQ-owned Universomo, various indie studios and Finnish public broadcaster Yle.

## Studio

Finland	Founded	Employees
61°29'N 23°46'E	2010	40





# Awesome armies, user-generated action and world-class agility

Think rock, paper, scissors—but with awesome AI-controlled armies that players can handpick and send into combat. Battle Legion is the latest hit from indie studio Traplight, which has a reputation for punching above its weight with ingenious mobile strategy games. After Finnish game studio Universomo dissolved, former employees Riku Rakkola, Sami Kalliokoski and Jari Paananen set up Traplight in 2010.

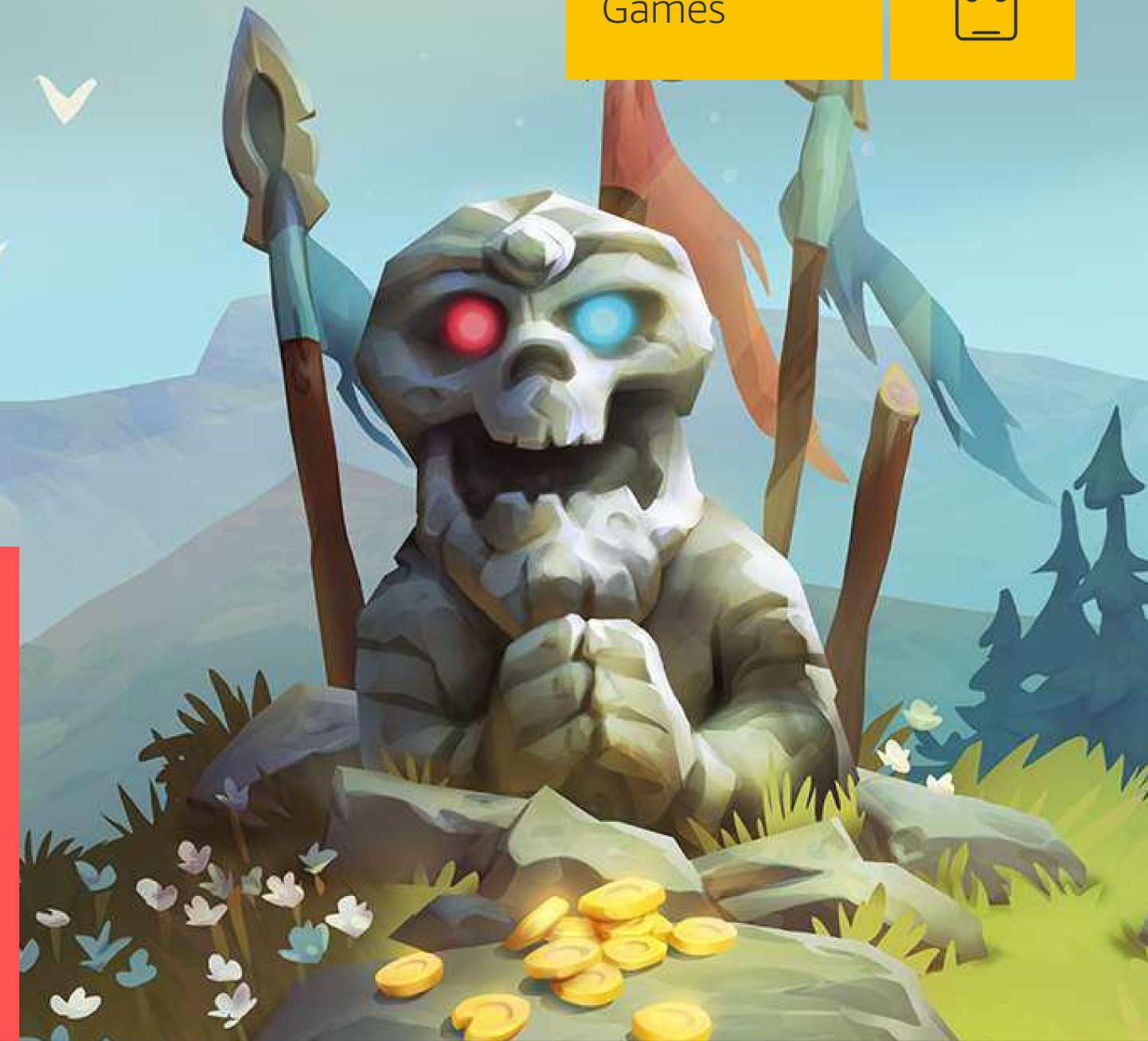


They scored their first award-winning international hit in 2016 with Big Bang Racing, a massive free-to-play game that includes 10 million racing tracks generated by players.

Battle Legion—which went Top 100 in multiple stores the week of its global launch in July 2020—lets players build their dream army of archers, sword fighters, wizards and mythical creatures, position them on the battlefield, then sit back and enjoy fast and furious AI-enhanced clashes.

Traplight's secret weapon is its nimble approach to team structure and game development, which uses the flexibility of AWS to quickly and easily push out prototypes, broaden the player base and create a clever mix of asynchronous and real-time technology.

A recent \$9 million funding round gives the studio a solid base from which to continue building global gaming success stories.





**“Game development is pure theater”**

When I worked at Universomo, the CEO told me game development is like theater; your job is to create the largest illusion possible using the fewest resources, and I’ve never forgotten that. Technology is just a tool; the real skill is being able to use it in a smart way.

Traplight has gone through distinctly different stages. There were three years of small, independent projects before we started working on Big Bang Racing. We had a lot of ideas about how we were going to expand, but none turned out the way we thought. It’s always been about seeing where we are and working out the best way forward, instead of sticking to a plan that no longer fits. New ideas come through all the time and you have to embrace them with an open-minded approach.

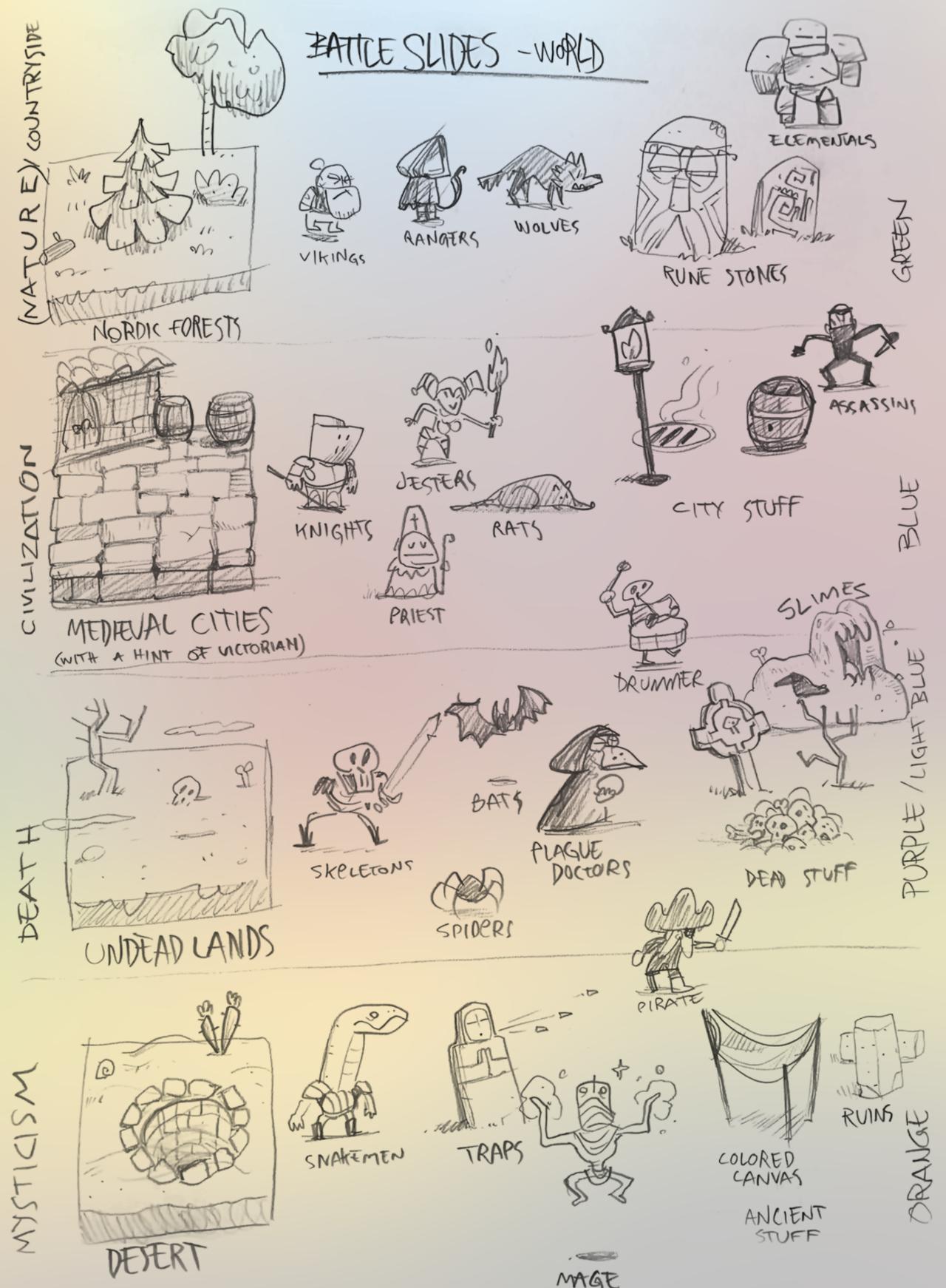
**“We pumped out as many prototypes as possible”**

After Big Bang Racing, we started working on new concepts and—as we wanted as many prototypes as possible—we set up several sub-teams to run at the same time. They were two pretty challenging years because we got excited about so many ideas that just didn’t click. We’d try to improve them, but most of the time would end up accepting it just wasn’t going to work.

Several ideas went as far as beta launch where—using metrics to track new players—we’d measure how far into the game they continued to play, and whether they logged in again the next day and so forth. The upshot was that although there were times we thought we had something special, it didn’t resonate with players.



**“Being small and agile is an indie game studio’s secret weapon.”**





### “Laziness can be a virtue”

One of the ways we stay nimble is through a new framework that enables us to push out prototypes really fast. We work with Unity and we’ve built a skeleton on top of that, so when you plug in a new project, you’ve got the elements our games have in common—such as the menus, etc.—ready to go. [Amazon EBS Snapshots](#) allows us to instantly create a new environment, and we use [MongoDB Atlas for AWS](#) for our database deployment.

We’ve started using [AWS CloudFormation](#) to automate the creation of environments, so within an hour, it’s ready to fill in with the actual game details. By automating so much, it frees up our time to concentrate on things that need creative solutions. Laziness is one of the greatest virtues of humanity; we’ve done so much work to avoid doing work!

### “We took an idea and added our own unique twist”

We wanted to build a user-generated game where players could express their creativity by building amazing levels for others to enjoy. That hadn’t been done all that well for mobile up until then—the games already out there were too technical.

Taking inspiration from Little Big Planet and Minecraft, we came up with Big Bang Racing. It’s super easy to create your own content; you draw with your finger or just

grab the objects you want. It’s so simple that anyone from a kid to a granny can do it.

We have 10 million user-generated tracks in Big Bang Racing, so when a new player comes in, there’s a question around what you show them. How do you know the level they get is not only good, but appropriate for their skill and the amount of upgrade they have in their vehicle? Similarly, Battle Legion has 10 million player-generated armies—which one do you pitch a new player against?

In Big Bang Racing, we came up with an elegant fix: a test bench where people can play recently published levels and rate them. We monitor how long it takes them to finish, and we know what kind of vehicle they’re driving so we can analyze all those elements programmatically, and create a model of what kind of a level it represents. As players are also rating levels, we can see which ones are good or bad, tap into that data to mash them around and then use a search engine to find an appropriate one. There’s a lot of magic involved behind the scenes.

It’s all about the experience you give the player. I see companies creating large and constantly active virtual worlds that require a huge amount of technology, and then they plug players into it. They’re coming at it from the wrong direction—I always prefer to see things from the player’s point of view first.



### “We throw in the variables and the search engine does the rest”

To get to that point in Big Bang Racing, we used [Amazon Elasticsearch Service](#) to define the parameters and values. We want a level that can be defeated by a player's engine level while making sure the fun factor stays really high.

Variables like how long it took to finish the race and how long to edit the level are important because they're an instant indicator: if someone spent 10 seconds on a level and published it, you can be fairly sure it wasn't very well thought out. So, we throw all those elements into the mix and the search engine does the rest.

### “Zero to one million”

When you're about to release a game and you know there might be a million players coming on the first day, it's really stressful for a server developer. We've lined up this great treat that everyone's excited about—but if it doesn't work, it's all ruined.

Luckily, when you're in a cloud environment where you can change resources on the fly, it's easy. We reserve way more hardware than we're ever going to need and after a couple of days, we tone it down because in the cloud, it doesn't cost an arm and a leg. For the global launch of Battle Legion, we mostly used [AWS CloudFormation](#) and [Amazon EC2](#) to scale. We also rely heavily on auto scaling groups, so set up [AWS Auto Scaling](#) with their corresponding load balancers, target groups and route 53 DNS records.

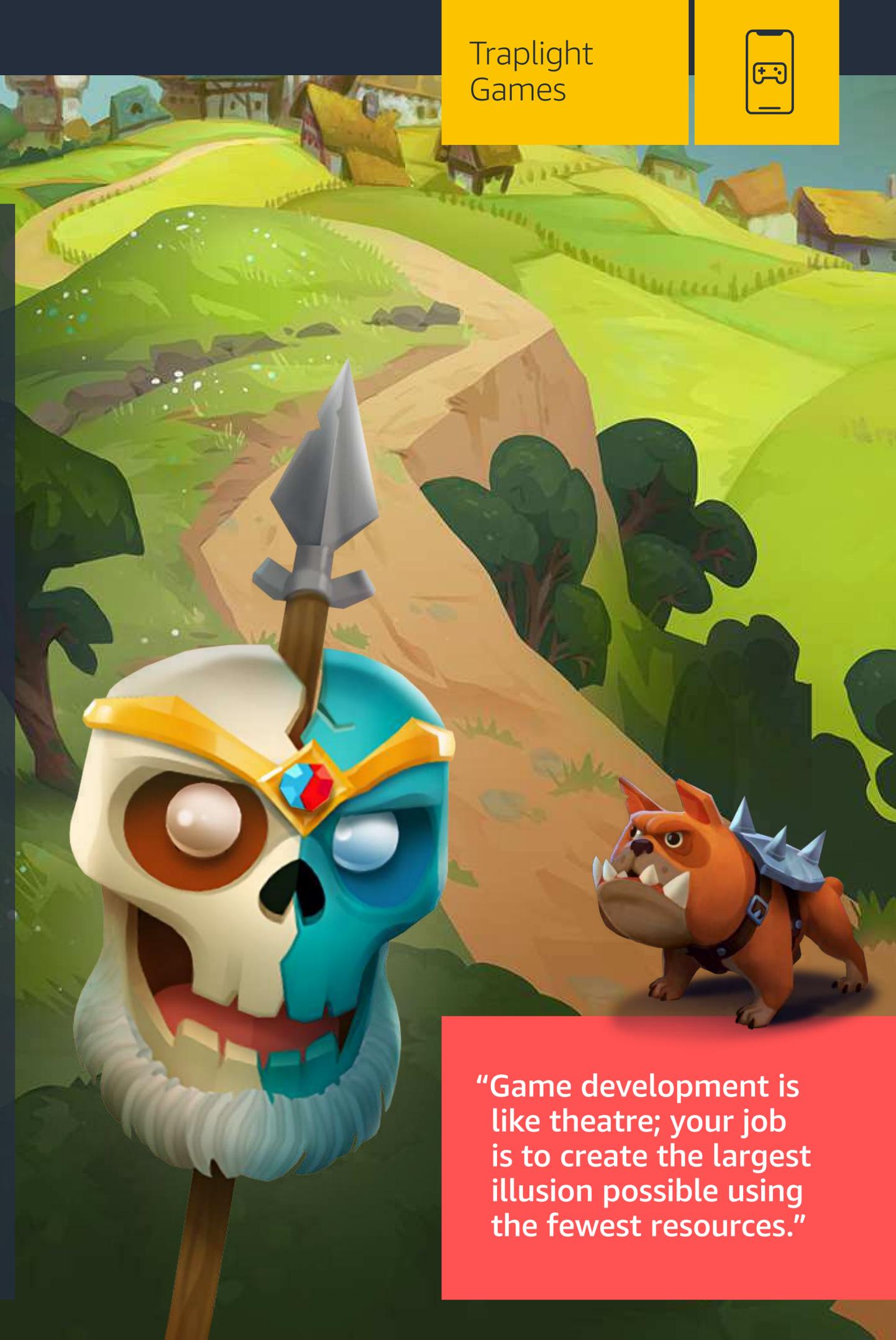
### “Our servers are bombarded with half a million simulations”

We need to stress test the game so we monitor the first 40 minutes of gameplay of a new player. We record the calls the game makes to our AWS servers and create a playback of that. With Battle Legion, at each location, we ran 1,000 individual playback simulations of players hitting our servers. We made a container system so we could bombard our servers with the simulations and watched it scale automatically with the press of a button. Using [Amazon Elastic Container Service \(Amazon ECS\)](#), we can change the stress levels of our servers; for instance, starting with simulating 100,000 players and going up to 500,000.

### “You need to keep your game world alive and breathing”

With modern mobile games, you're trying to create a service that will last for years so the challenge is to keep coming up with fresh content, events and experiences for everyone, while at the same time maintaining the balance between new and existing players. You need to make sure your game world is alive and breathing, and yet still keep that first-time experience similar to what it was in the beginning.

I enjoy every day here because of the people I work with and the open culture. When we give feedback, it's listened to and things change. I also like the indie setup because although we have processes, getting ideas approved is quick and straightforward.



“Game development is like theatre; your job is to create the largest illusion possible using the fewest resources.”



The studio is our second home. We were asked what kind of office we wanted so we went for couches and hammocks to create a laid-back atmosphere. No one does their best work when they're under constant pressure; we all need time to think.

**“Strategy games teach you to think on your feet”**

I was five when my father taught me to play chess and it was helpful in learning how to think fast and adapt a plan quickly. We got our first computer when I was 10 and I started to teach myself how to program a few days later.

Growing up, my favorite game was Mike Singleton’s Lords of Midnight. It came with a novella, so you could totally immerse yourself in that world. I’ve always been into strategy games; the Civilization series is one of my all-time favorites and my absolute go-to is The Creative Assembly’s Total War series.

I also like playing small indie strategy games on PC because they often have ideas that translate well to mobile. Supercell’s Clash Royale is the game I wish I’d come up with. It’s such a good combination of strategy, an ecosystem and a way to bring in money.



**WHAT IS BATTLE LEGION?**

Battle Legion is a mass battle multiplayer spectator game with deep strategy elements and AI-controlled troops fighting for you.

**GAME PLAY**

Build your dream army from dozens of versatile fighters and find the victorious army composition that brings other players to their knees!

**PLAYER COMMUNITY**

Join players and developers for the best strategies and unit synergies. Being a part of the community gives you the opportunity to steer the game in the right direction, share your opinions and make suggestions.



**“Machine learning will revolutionize personalized purchase offers”**

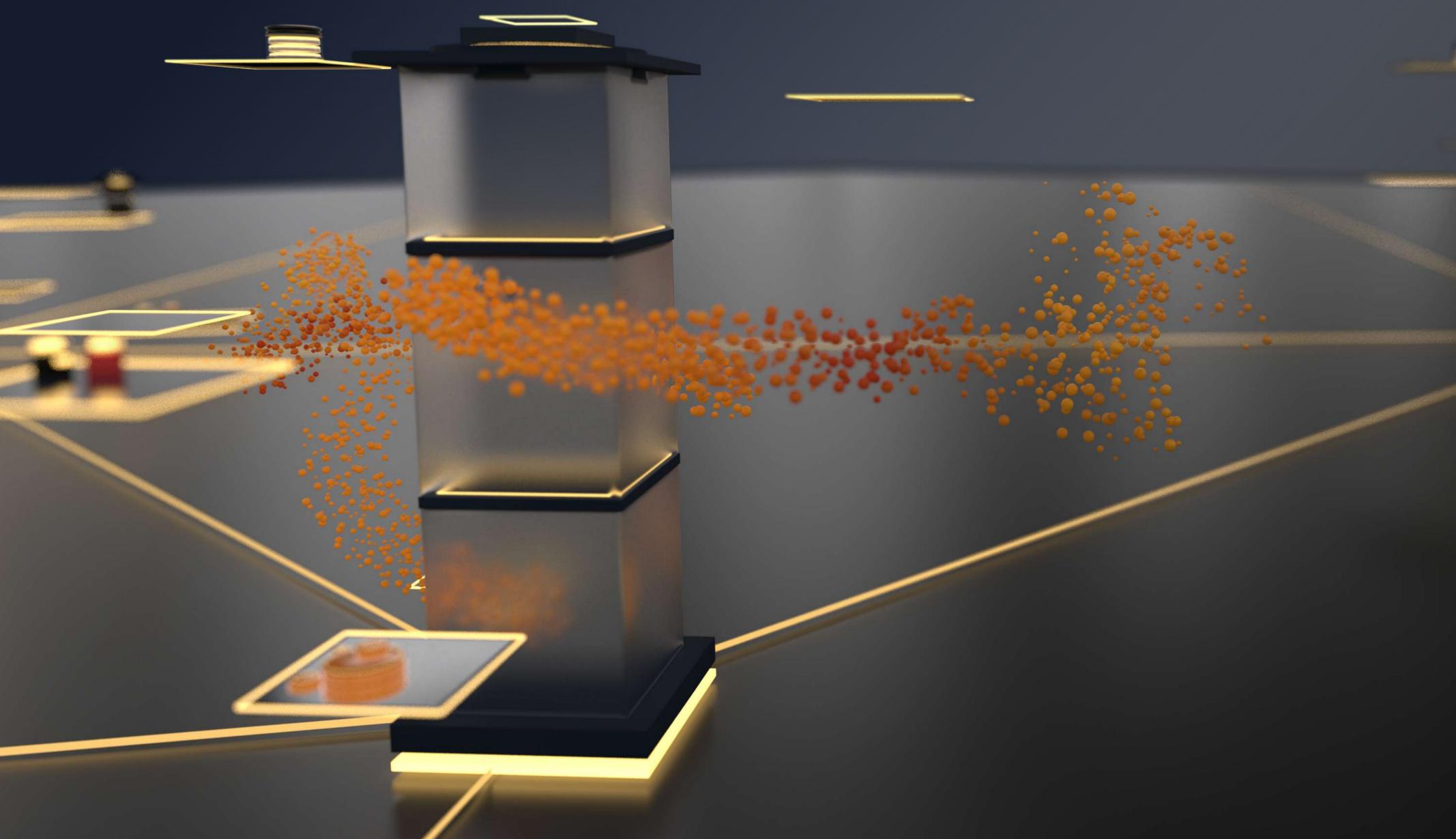
We recently recruited a machine learning expert who’s looking at analyzing what type of content to offer players based on their in-game behavior. The main area we’re looking at is personalized purchases. So, given the geo-location of a player, the way they’ve played the game, how many purchases they’ve made before and what kind of army layout they’re using, we hope

to figure out what kind of offer they’d like. It’s early days, but I’m curious about what this technology will bring to player content.

**“Don’t reinvent the wheel”**

My advice to game devs looking to launch their own venture is make sure you understand the market as well as the game. As for server developers, what they teach in game development schools is to make real-

time servers but those are really expensive and heavyweight. Rather than always going for the latest, coolest tech, have a look at traditional web technologies, like REST APIs, because they’re less expensive and less complicated. Less complicated means less development, which means less time to market, and that’s so important.



**AWS Services used:**

<b>EKS</b> 	<b>ECS</b> 	<b>S3</b> 
<b>CloudWatch</b> 	<b>Route 53</b> 	<b>EC2</b> 

At-a-Glance

**Key games:**

 (2016)	 (2020)
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**Fast fact:**

Traplight’s 30-strong team was recently boosted by a \$9 million funding round, which will help power its ambition to keep developing global gaming successes.

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