The Makers Club : Game On!

Interviews with Game Professionals

Have you ever wondered what creating a video game is like?
Hear from some game designers and coders!

SARAH TAN
GAMEPLAY ENGINEER

TELL US ABOUT WHAT YOU DO!

"I'm a gameplay engineer at *Rec Room*, a virtual social club where you create and play games with friends from all around the world. The game is fun, free, and works on everything from phones to VR headsets. Since my company is a startup, I get to wear many hats, which is really fun! It allows me to program almost every part of the game — from the server and databases, all the way to the user interfaces and menus — which is an opportunity you don't get at big companies.

Most days, I start off with a quick status meeting with my team. I don't particularly enjoy meetings, but this one is important as we update each other on what we're working on, or if there is anything blocking us from completing a feature. On a good day, I get to spend the rest of my time in heads-down programming mode. Those are my really productive days. More often than not, however, I'll have other things interspersed throughout the day, from project kick-off meetings, to job application interviews, and even company-wide playtesting sessions."

WHAT IS THE PROCESS LIKE FOR DEVELOPING A GAME?

"*Rec Room*, the game I am working on, is continuously being updated with new features, so our development process looks different from traditional game companies. For us, each large feature is a 'project', and we usually begin by asking ourselves what we are trying to achieve with the feature.

If it's a feature requested by the players, what do they really want, and how can we generalise the solution? We also come up with goals and how to measure them. For example, we might want players to understand that there are many user-created rooms, and measure that with the percentage of players who go to a user-created room during their first session.

Next, a designer comes up with a design document breaking down that large feature into smaller ones, and detailing the different user flows.

At this point, we do a project kick-off meeting, where we sit down and start planning and asking questions. Such as: What is the testing plan like? How long do we need to complete it? Who needs to be on this project team? Are any art assets required?

Once that's done, the programmers start coding. There will definitely be questions which arise during this stage, and that's where the goals help us make decisions — we're constantly asking ourselves, 'Does doing this thing a certain way help us achieve any of the goals?'

Throughout this whole process, we're constantly testing, and when the main feature work is done, we do a broader test with the Quality Assurance (QA) folks. If it passes their tests, the project is good to go and can be shipped out to players, or else we fix any bugs and submit it for testing again."
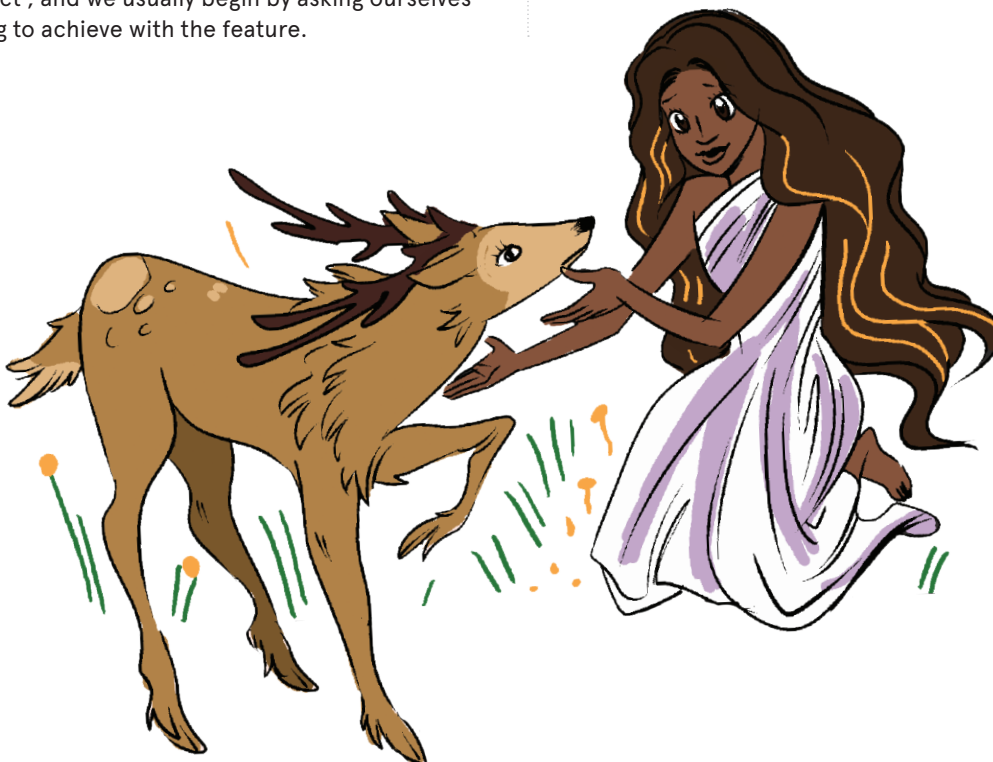
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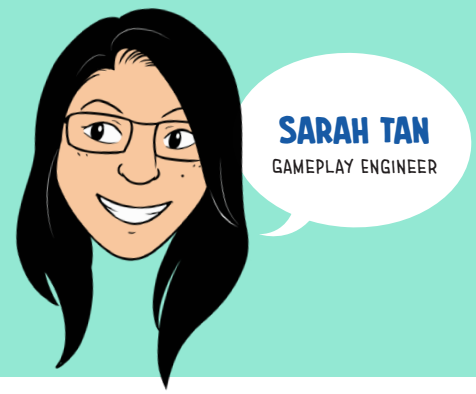
HOW DID YOU GET STARTED IN THE GAME INDUSTRY?

"Back in Junior College, my school and DigiPen jointly offered an introductory course in interactive simulation. DigiPen is a well-known game college — they're like the Harvard of the game industry. That was my first taste of programming. DigiPen offered me a scholarship, but I wanted a more generalised degree so that I would have more options. I ended up studying Computer Science at the National University of Singapore (NUS), followed by a Master of Entertainment Technology at Carnegie Mellon University (CMU) in the USA.

My course at CMU exposed me to the game industry in the USA, and gave me the opportunity to intern at an American game studio. The game industry in the USA is very different from Singapore's, and is much more mature with a lot more opportunities. That was when I realised that being a game programmer was actually a viable career path in America. I can't wait for the game industry in Singapore to catch up though, because I would love to be able to return home!"
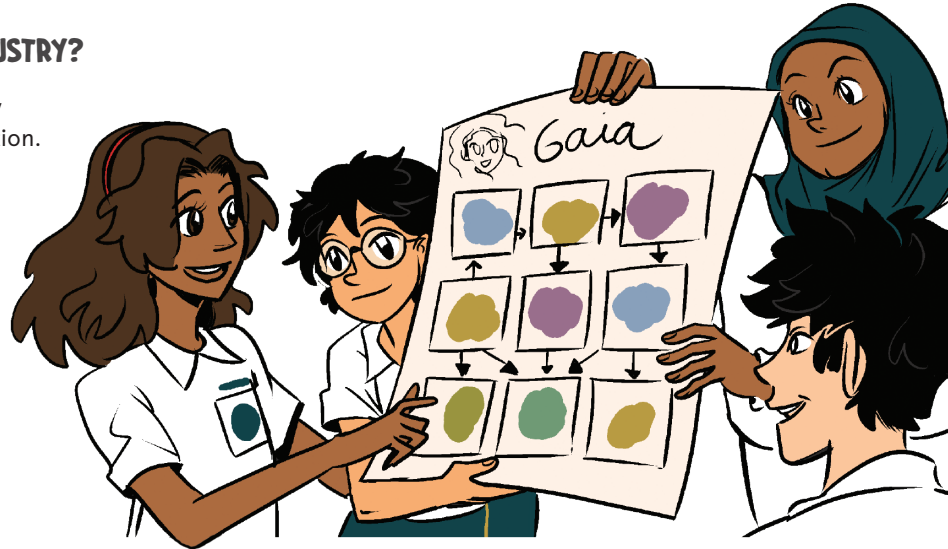
TELL US ABOUT ANY DEFINING MOMENTS THAT MADE YOU REALISE THAT YOU WERE INTERESTED IN WORKING AS A GAMEPLAY PROGRAMMER?

"I don't think there were any defining moments. It was more of a slow build up, where the more games I coded, the more I enjoyed it. I'm very lucky that my parents gave me the freedom to follow my passion. They supported me throughout this whole journey, even though going into the game industry was not something they wanted me to do. I'm also really glad I signed up for that DigiPen course, as without it, I would never have tried programming — it wasn't cool back then!"

WHAT ARE THE ASPECTS OF CODING OR GAME DESIGN THAT YOU ENJOY?

"Coding is like magic — I love being able to see simple lines of text which I wrote get transformed into something I can see and play with. There's also that feeling you get when you've been working on a complicated piece of code, and after a long time, it works! Think of it like finally solving a tough math problem which you've been stuck on for days. This is similar, but ten times more satisfying!

Specific to my company, being able to quickly release new features to players is a big deal. On my first day at *Rec Room*, I was allowed to touch code, and on my second week, ship my first feature. In a lot of big companies, you might be working on a feature for years before it ever gets released. And that's assuming it doesn't get cancelled and leave you with nothing to show for your time. I also really like how much autonomy I have at my company. Because we're a startup, I'm able to make the smaller design decisions myself, instead of asking my designer, and also choose which features I want to work on."

HOW HAS YOUR JOURNEY AS A PROGRAMMER BEEN THUS FAR?

"My journey has been full of ups and downs. I struggled with programming throughout undergraduate, and actually only started to enjoy it during my Master's programme. Good thing I'm stubborn and hate giving up! There was also this particular incident which I'll never forget: at one point early on, a good friend joked that I only got into the programme because they had a female quota to meet. Even though I knew he wasn't serious, that still hit me really hard. It made me realise that as part of the majority privileged group, we tend to take things for granted and are not always aware of how it can come across as insensitive.

I'm extremely thankful for the great company culture at *Rec Room*. In all the years I've been there, I haven't experienced any gender based discrimination. My colleagues are all respectful humans whom I love, and they are more than willing to lend a helping hand or teach me a new area of programming. It's a great environment and I can't ask for anything more."
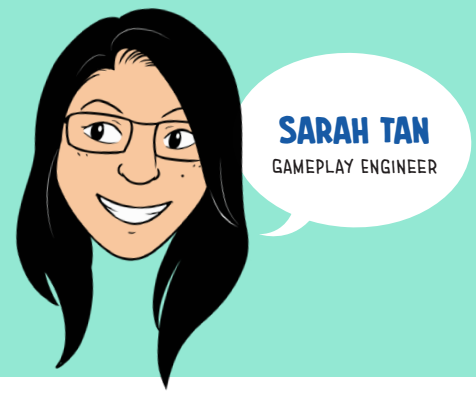
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BESIDES PROGRAMMING SKILLS, WHAT OTHER SKILLS DID YOU HAVE TO PICK UP TO BE A GAMEPLAY PROGRAMMER?

"Definitely soft skills, like critical thinking, teamwork, and communication. Making a game is a very collaborative process that requires input from programmers, artists, designers, testers, and more. At bigger companies, each of those roles are even further broken down (e.g. concept artist, 2D artist, modeler, rigger, animator, etc.), and it's important that everybody is on the same page.

Unfortunately, a lot of students I meet only focus on the hard, technical skills. Here's the thing though, it's much easier to train somebody up and teach them how to code than to try and change their character. If you have a crappy personality and cannot work with others, it doesn't matter if you're a rockstar programmer — few people will be willing to share a carpet with you!"

WHICH GAMES DO YOU MOST ENJOY?

"Fun fact: I actually don't play video games that much! In fact, I can count the total number of games I have installed on my computer and phone with my fingers. I prefer board games — after spending most of my day staring at a screen, it's nice to give my eyes a rest. I also just love that tactile feeling of having something physical in my hands."

"When I do play video games, I love multiplayer games with friends. It's the social aspect of chatting with my friends that's my favourite — I don't have to be good at it to have fun! This does mean that you need a good-natured team though, since not everybody enjoys playing games like Dota 2 with a teammate who just keeps talking and laughing (and dying). I also like creation style games like *The Sims*, where I spend almost all my time just building. This is part of the reason why my current job is the perfect fit for me: *Rec Room* is all about creating and playing games with your friends!"

WHAT ADVICE WOULD YOU GIVE TO AN ASPIRING PROGRAMMER?

"There are many different flavours of programming, from gameplay, which is what I do (though that can be further broken down), to security, and even business analytics. It's okay if you don't know which area you're interested in. The most important thing is to build a strong foundation and learn how to think. As you experiment more with programming, you'll naturally find things which you enjoy and dislike, and that will help you decide.

Above all, don't give up! Programming is not easy, and you'll face many setbacks. As mentioned earlier, while studying computer science in university, I struggled with it a lot. It got to the point where I actually cried a number of times. Thankfully, I had amazing teachers and friends who helped me every step of the way, and I definitely wouldn't be where I am now without them. A big shout out to all of them!"
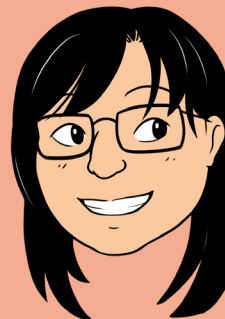
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KO WAN LING
GAMEPLAY ARTIST

TELL US ABOUT WHAT YOU DO!

"I come up with events, features and/or concepts for games, and work with the team on realising these concepts. Every day, I check the current status of the live game: make sure everything is running right, read up on the players' opinions on the forums, see that our sales are doing well. All these live happenings are fed back into my design process and would influence any design balancing I have on hand at that moment, or later on in new upcoming features."

WHAT IS THE PROCESS LIKE FOR DEVELOPING A GAME?

"Let's take it that I'm developing a new feature. I will come up with an initial concept, and discuss this with fellow game designers and the community manager on the direction of the concept. During this phase, we also briefly go to and fro with the rest of the team. We will confirm with the producer that the feature will have good sales, check with the programmers that the feature is feasible, request for some small scale mockups from the artists, all while ensuring that the feature itself is fun for players.

I find it really interesting to talk and communicate my ideas to each of them, as I have to know what to focus on and what to filter out. For example, artists are mostly concerned with the look of a game and are less interested in how the game plays out. Programmers, on the other hand, like to know about every single small detail and different cases about the feature, but care less about the aesthetics.

Once everyone has approved of the concept and its feasibilities in all areas, I will then finalise it in a game design document (GDD).

At this point, artists and programmers can start working on bringing the feature to life based on the GDD. For me, I will check in periodically that the programmers and artists are going in the right direction, but my main job will be to balance the feature. I have several considerations, such as how difficult the feature is, how much of each reward players should get, how this will affect other ongoing features or events in the game, how it will affect future events, and the exact calculations on sales figures. I will basically be handling all the calculations and numbers. These values will go through a few rounds of checks with other game designers, the producer, and the community manager, and once final, will be implemented together with the programmers into the game. When the art is in as well, I will do a playtest, or multiple rounds of playtests with the community manager if it's a big feature, to make sure everything looks and feels good.

I will hand off the feature to the quality assurance (QA) testers in the team, where they will check for any bugs or issues. Any problems will be fixed by me, the programmers, or the artists.

Once all the issues are cleared, the feature is set in the live game, and we await the players' reactions!"

HOW DID YOU GET STARTED IN THE GAME INDUSTRY?

"When I was a kid and bored in class, I would play paper soccer on sheets of scrap paper with my friends. We would also draw up little dungeon levels and somehow simulate them with pencils and erasers.

Later, I played video games, and I remember marveling at the graphics of the *Final Fantasy* series and wondering how they managed to make such interactive and compelling sequences. I drew quite a bit during this period, and the idea of seeing art coming to live in an interactive manner struck me very strongly, which led me to decide to go into the game industry.

I took a specialisation in games in college and did an internship as a game designer, which ultimately led me to where I am now."
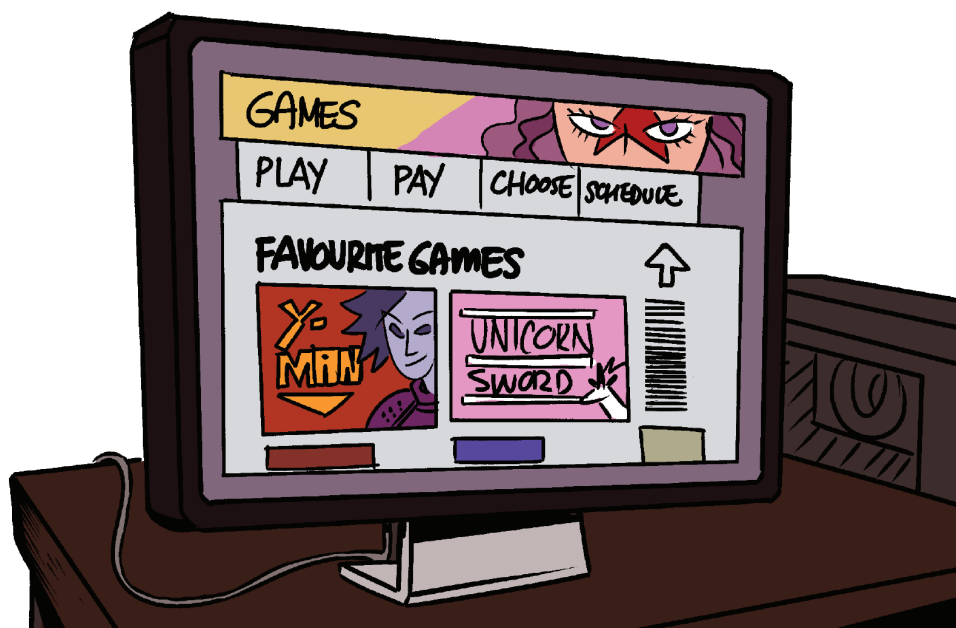
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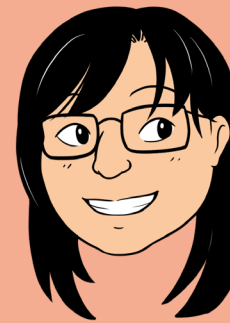
KO WAN LING
GAMEPLAY ARTIST

TELL US ABOUT ANY DEFINING MOMENTS THAT MADE YOU REALISE THAT YOU WERE INTERESTED IN WORKING AS A GAME DESIGNER?

"Before my internship, I had debated between being a programmer, which was more versatile and would allow me to easily switch to a different industry, and being a game designer, which was more focused.

During my internship, I got hands-on actual experience on how the development and operations process works that made me more set on becoming a game designer. I realised then that game designers are the ones who ideate and oversee the game together with the rest of the team, while programmers hold a more significant role in executing the idea. As I wanted to take a more creative role, I decided that my goal was to become a game designer instead of a programmer."

WHAT ASPECTS OF CODING OR GAME DESIGN DO YOU ENJOY?

"The coolest thing about game design is that you always start off with just scraps of paper, or messy drawings on whiteboards, and you watch these ideas come to life together with your team. And when you see actual players playing your game, and enjoying them, there's this really gratifying feeling that bubbles up and makes you want to make more games that are even more fun and exciting. There are also times when you think you've made the most awesome feature ever, but the players just hate it. Despite that, I really enjoy the mix of emotions from all parties every time you deliver a feature you designed, which I think is something that's really unique and emphasised in games.

The game designers' main role is to manage the overall direction and balancing of the game economy, but we can also touch on the narrative and marketing aspects, and even some basic art direction or concept prototypes. There are so many things that we can do as game designers that it's rarely dull when we go to work. And of course, we also need to regularly play up-and-coming games on the market in order to keep ourselves updated on the latest design trends, which really isn't a chore for me.

I don't really code much nowadays as a game designer, but personally, my favourite part about coding is when I manage to get something working. It makes me feel like I've just solved the world's hardest sudoku puzzle."

HOW HAS YOUR JOURNEY AS A GAME DESIGNER BEEN THUS FAR?

"The game industry in Singapore is really small, and many, many people want to be a game designer — because it's a really cool job! More often than not, you can't find a role in a decent company, and going indie can be hard financially and emotionally.

I went the indie route after graduating and worked as a game designer and programmer, but did not manage to release a financially successful game. Thereafter, my team and I had to take on contract jobs to sustain our finances, while working on a new game idea. It was fun actually, as most of our contract work was still related to games or media, but it was quite draining after a while. After about 2 years, I got a chance to be employed by another company as a game designer.

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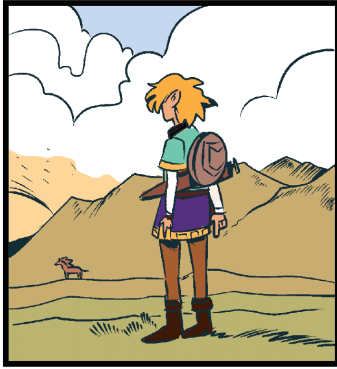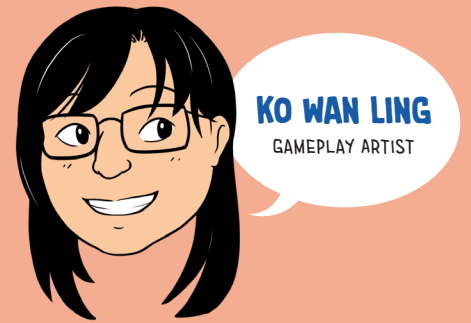
I actually haven't personally met any gender prejudices in the game industry. I find that people are generally more surprised that I am in the game industry itself than that I'm a woman in it. There's a general perception, especially amongst the older generation, that you don't do actual work in the game industry. This might be something that might put people off of this industry, as compared to say medical or law, where you might be more recognised as a 'professional'. I was just really into the game industry, as I didn't think any other industries were as fun as this one."

Besides programming skills, what other skills did you have to pick up to be a game designer?

"Back when I was studying and learning about statistics and different graphs and curves in Math class, I was always sceptical about how they could be used in real life. Now, I use them regularly in my balancing calculations and can see the impact they have on players.

This is kinda off-track, but I just wanted to explain how amazing it is — to me, at least — to have math formulas affect the emotions of players. Imagine that you have to give stars to a player when they level up from level 1 to 10. If you gave 5 stars each time they levelled up, this would be a straight line constant graph ($y=5$), which is utterly boring to the player. It isn't exciting for them to get 5 stars when they jump from level 1 to 2, and get 5 stars again when they jump from level 9 to 10. But, if you give 1 star from level 1 to 2, 2 stars from level 2 to 3, 3 stars from level 3 to 4 and so on, players will develop a better sense of accomplishment; they get more stars as they increase in level which feels like the more effort they put into levelling up, the more rewarding it gets. And you get this change in emotion just from using a straight line increasing graph ($y=x$) now! And of course things will feel different again when you use power or exponential curves.

Anyway, I had to brush up on my communication skills and am still learning how to convey my concepts to different people. Another thing that's a bit cliché (but true!) is that I had to improve my time management skills. There was a period of time where I was working with some team members locally, with a few others in Vietnam with a one-hour time difference, while the remaining members were in the United States. Since development can only start when the game concept is finalised, it was always important that I finished my part on time, and communicated it properly to all members. Any issues in the live game also had to be handled immediately, which made it important that I knew how to prioritise any work on hand and also inform the team on any reshuffling of tasks."

Which games do you most enjoy?

"I love hack-and-slash action games like *Devil May Cry* and *Monster Hunter*, but on lazy days, I'll indulge in some strategy games, like *Into the Breach* and *Faster than Light*. I spent way too many hours when I was a kid on Pokémon with its surprisingly deep battle mechanics. I generally play all genres, especially ones with very unique features, like the enemy system in *Shadow of Mordor*, or the incredible way *Invisible, Inc*. made a turn-based stealth game."

What advice would you give to an aspiring game designer?

"Play as many games as you can! Find out why you like the games that you like, and how you can improve on those that you don't. Dabble in other areas of game development: coding, drawing, management, business, and marketing. You won't need to know them extensively, but knowing some basics would make it much easier to communicate with a team that will have such diverse skill sets."
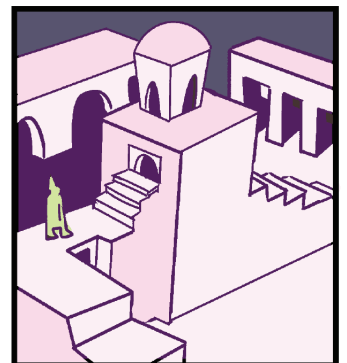
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AIYSHA PLEMPING
GAMEPLAY ARTIST

Tell us about what you do!

"I am currently a User Interface (UI) artist working on mobile games. I design mockups and art, and make sure things feel good for the user. In addition to creating mockups, I also deal with graphic design, icon creation, and interface integration."

What is the process like for developing a game?

"It is like getting cats, dogs, and cows to make a cake. It's often chaotic and requires a lot of thinking on your feet, which makes it exciting! It's about finding a solution and making sure the project moves forward. Everyone has a role to play and in general there's a lot of teamwork and communication between everyone."

How did you get started in the game industry?

"I started a company with my university classmates and haven't left since then. I kind of created my own job through sheer blind youthful confidence. I didn't play a lot of games when I was younger but I was very inspired by *Final Fantasy* and the Japanese culture."

Tell us about any defining moments that made you realise that you were interested in working as a game artist?

"There was no real defining moment. There was a role to be filled in the startup I was part of and I just did it. Eventually, I got in too deep and I decided to stay on. Being a game artist means that you work as part of a team, and that to me is the most interesting but also the scariest part of the job. It's very different from illustration because there is a lot of teamwork involved and you have to be more than just a competent artist, you have to be a good team player."

What are the aspects of creating game art assets that you enjoy?

"Seeing it in the game. Seeing the final product is often the best part of the job."

How has your journey as a game artist been thus far?

"Difficult. I think that impostor syndrome is something most artists, men and women alike, grapple with. As an artist, we get plateaus in our skill where we can't seem to improve for a long time. I did almost quit during one of my plateaus to go back to school, but ended up staying on and taking part-time courses instead. Now, when I experience the same feeling, I just power through it. Art is a never-ending cycle of improvement and art blocks, so a big part of being a professional artist is knowing how to be able to draw at work everyday even though you are feeling like the worst artist in the world on that day."

Besides illustration skills, what other skills did you have to pick up to be a game artist?

"I learnt basic animation. My background in computing meant that even though I don't program, I can understand the pains of being a programmer and it helps me be a better designer and artist. I also picked up most of my UI and UX know-how on the job.

It's a bit daunting, but chances are, most artists end up picking up lots of soft skills and understanding the more experience we get. So don't feel the pressure to learn everything! Focus on being a good artist first to get into the industry."

Which games do you most enjoy?

"I like puzzle games and casual match 3 games nowadays. I used to play lots of *Red Alert* and *World of Warcraft*, but it's pretty difficult to find time for it now. Recently I picked up *Final Fantasy XIV* and that has just been a glorious trip for the eyes!"

What advice would you give to an aspiring game artist?

"Work on your fundamentals. It doesn't matter if you are a character artist, 3D artist, or UI artist. You'll be surprised how much easier your life will be if you have a strong foundation. Get to know people! I don't like networking, but it is useful. Also, manage your expectations. The game industry is, quite frankly, pretty brutal. You face deadlines, difficult people, pressure from all sides, long hours, and lots of challenging work. Burnout will happen, and you have to be prepared for it. Even so, if you ever feel alone and feel inadequate because of burnout, remember — even the best of us have experienced it. Remember why you love what you do and try to find that again."