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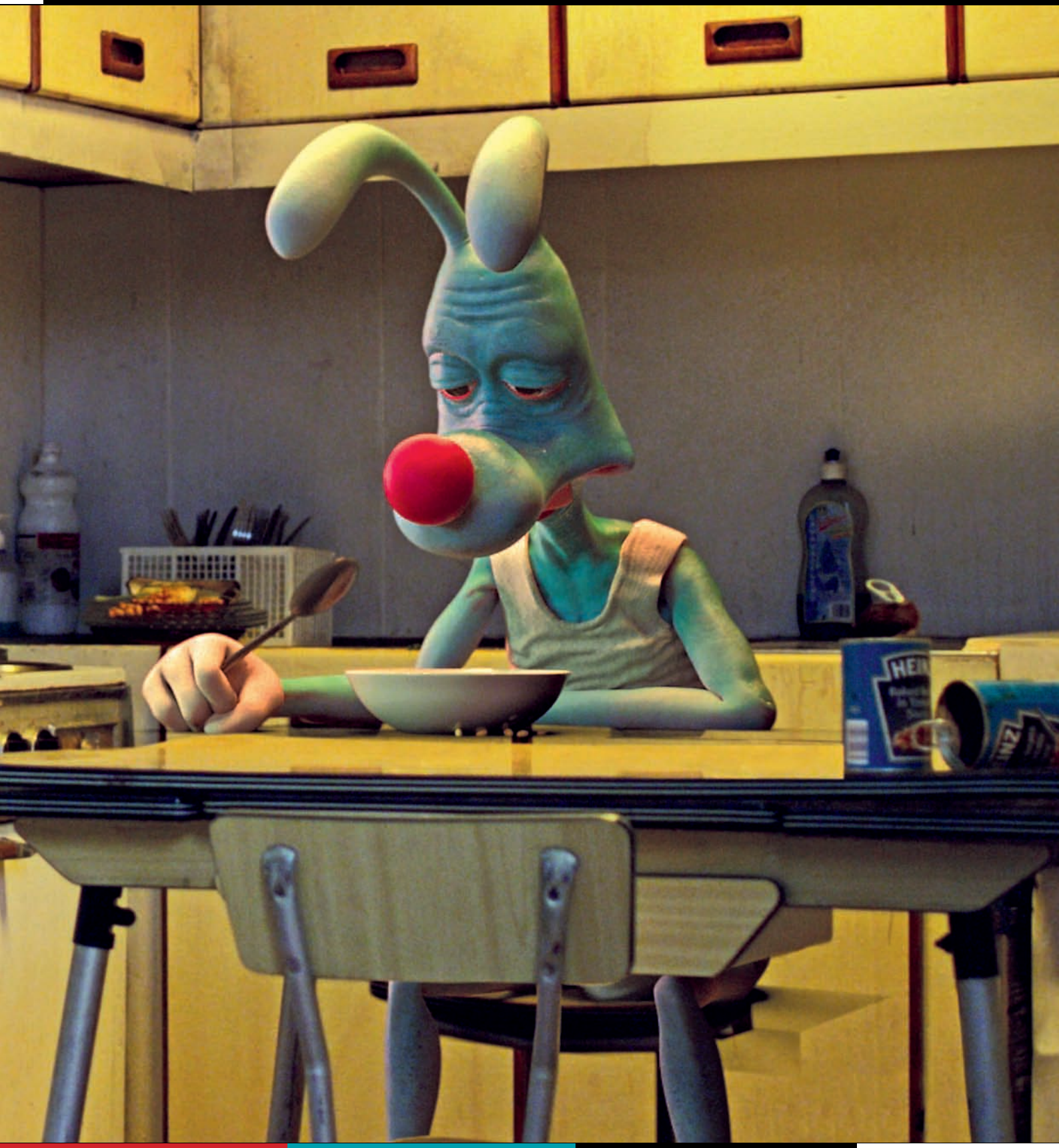

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Getting into Golaem

A first look into any software is always fascinating – but it's meat and bones only show after a few months of daily use, which is why we asked user "Nixolas" a couple of questions, who shares a handful of free assets on his site and has been using Golaem in Commercials and Feature films for almost as long as the software exists.

von Bela Beier

We are talking to user "Nixolas" (**www.nixolas.com**) who is currently employed at OPTIX (**www.optixlovesyou.com**) and moves between Florida and Dubai. After 2 years of studying Computer Programming at Penn State and studying Computer Animation for 4 years at IADT, he received a Bachelor's Degree of Fine Arts. See his movies, clips, and workshops on **www.youtube.com/nixolas**.

DP: **How did you get into Crowd Simulation in general?**

Nicholas King: While working as a CG Supervisor for Optix, we were increasingly approached by clients and agencies who started pitching projects that involved more and more crowd simulation. At the time, Massive was a huge player in our industry, and the complexity of the scenarios that we needed to simulate did not require such a robust piece of software. At first, I started to develop in-house setups (using cards and particles) so that we were able to quickly adjust to the immediate market trend, but knowing full well that we would soon have to find a better solution.

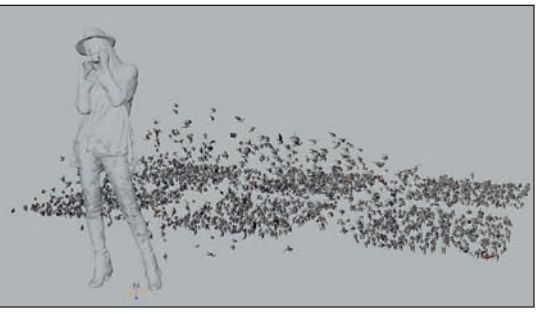
DP: **And when did you start with Golaem?**

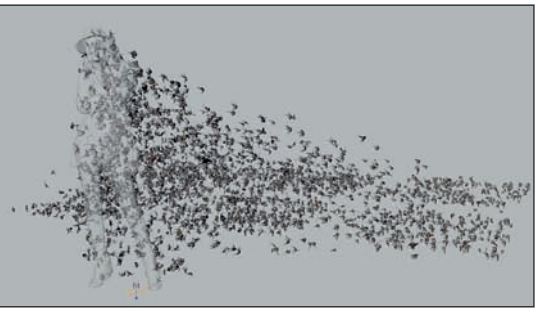
Nicholas King: Crowd simulation started trending to the point where budgeting and projecting schedules to clients were becoming difficult, naturally becoming more and more complicated as directors tried pushing boundaries. This is where I started to run tests with Massive and found that although it is an amazing piece of software, it became too tedious for our workflow, especially in the commercial industry, where we required quick turnaround times and the delicacy of managing assets within our already established pipeline. This is where I discovered Golaem, which was integrated directly within Maya as a plug-in, which meant we were able to task the work between our artists at different stages and interchange assets, all while working simultaneously with the crowd setup. This was paramount to the success of our new budgets and schedules, and we were able to quickly scoop up jobs at such a low rate in what was still a niche skill, at the time.

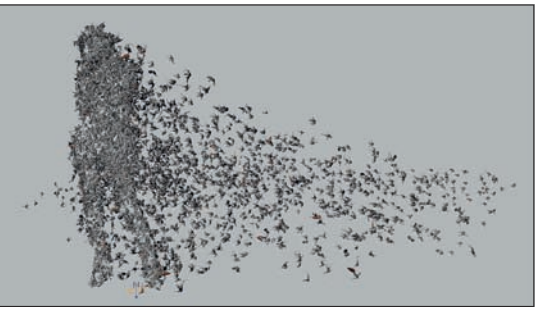
DP: **And after this time, what is your day-to-day use for Golaem?**

Nicholas King: We get a lot of commercial work, that usually involves your typical crowd setup (stadium, populating streets, ambient crowds), but after getting so heavily involved in the integration of a crowd pipeline with the team at Optix, I found that I was very interested in using those skills on personal projects.

Lately I've been using the non-commercial version of Golaem to produce funny, or weird, videos for my personal pleasure on my Youtube channel. Since I do get very meticulous about details, these projects usually take a long time to finish, especially since I'm only really working on them during the weekends or after hours.







DP: When you first started, what set Golaem apart from other crowd tools? And how long did it take you to get your first sim going?

Nicholas King: Honestly, there were two players at the time when crowd plug-ins were getting popular. I had it down to Golaem and Miarmy. They both carried more or less the same features and system, however, Golaem's interface, and organization of their tools made me feel a lot more comfortable and insured that I was getting involved in a solid piece of equipment that boasted professional quality and a well-thought-out pipeline that needed to be followed.

DP: If you compare that to your current working time: How long would you take now to set it up?

Nicholas King: I remember having to quote on a job that required a stadium shot, and after installing Golaem and using their extremely helpful resource of tutorials and knowledge-base, I was able to put together a test that I could ship to the client in under a couple of hours. The rest of the work really involved custom models, rendering, and scene setups depending on the shot at hand. I was able to jump from a couple of weeks of work and in-house development to around a day or two, depending on the assets needed. Since Golaem comes with an amazing character pack – 9 times out of 10 you have everything you need to get started on a basic industry standard job.

DP: What iterations and changes have been recently in your workflow?

Nicholas King: What is amazing about the team at Golaem, is they aren't passive about updating and giving us new features. Just in the past 6 months I've seen the plug-in change drastically with new tools that really make you re-think how you did things in the past. For example, when they released the Crowd Layout tool, we were able to use a cached simulation in a scene, duplicate any of those entities and individually manipulate their rotation, scale, position, offset timings, and even assets they were wearing. This meant that we could populate a stand at a stadium and duplicate it over and over again to create the rest of the stands, without any repetitions. Simulation times for massive amount of crowds were almost nothing.

DP: Are there any additional tools or plug-ins that work well with Golaem?

Nicholas King: When working on a crowd simulation job with Golaem, you'll be needing to have it involved during almost all stages of your typical 3D workflow. This means that in the modelling stage you would want to keep in mind how to organize the assets, textures, the amount of faces allowed, etc. In the animation stage, you'd want to work on the rig that will be used for your entities that were modelled, and all animations piped through that rig would all have to follow this. Since I am not an animator at heart, I found this process to be the hardest when working on my personal projects. This is why I want to mention the website **mixamo.com**. It's an online database of motion captured animations that you can have access to with your Adobe ID. You can adapt the animations from their rigs to yours very simply, and I've put a few tutorials online to reflect the workflow on bringing them into use with Golaem.

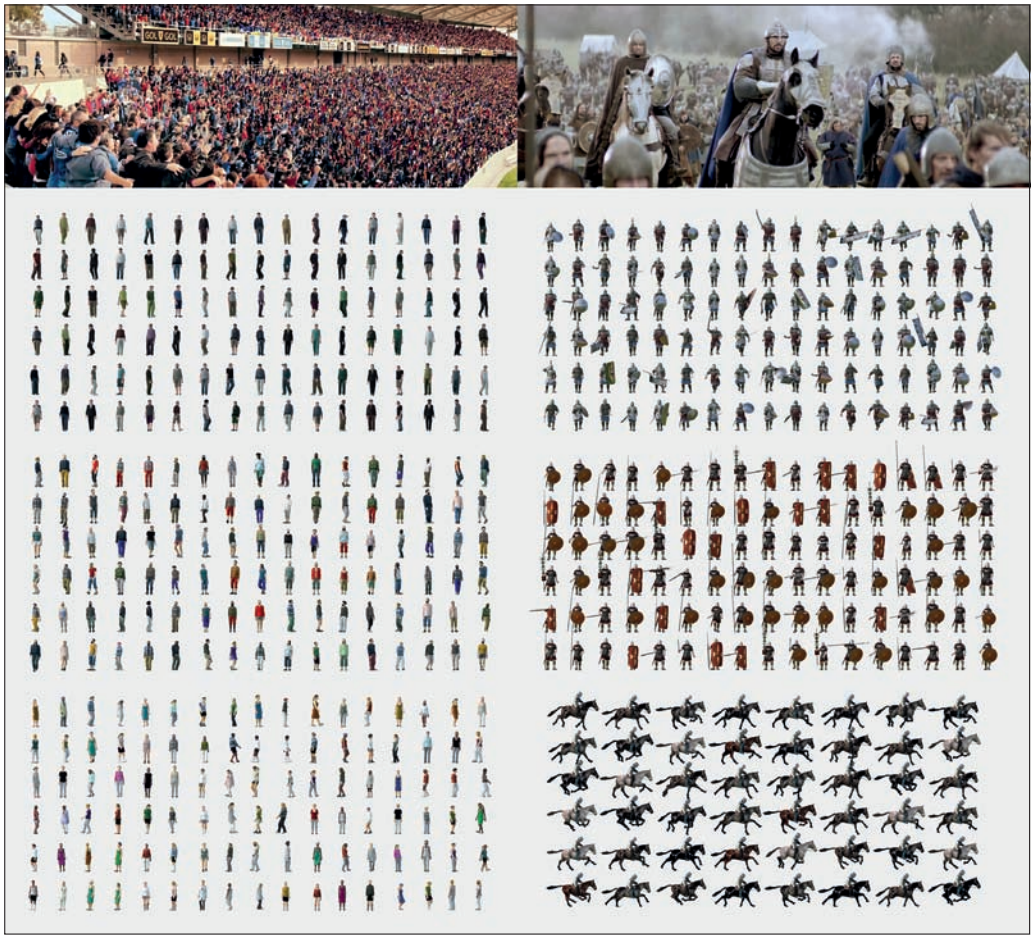
DP: What are the first things you do when you start a new project including crowd simulations?

Nicholas King: One of the most important rules to remember is that Golaem follows all of the 3D principles you've learned throughout your career. So when you were rigging a character and are painting in your skin weights, and you forgot to orient your joints before this, that will cause huge issues with Golaem (even if you try to rig the character in a way where it looks fine when creating your animations). In the modelling phase, since it's a bit of a cleaner process, the biggest thing you need to wrap your head around is how you will be organizing all of the different assets needed per entity. Will they share the same textures? How will you cycle through those textures. Which textures will want different hues. If the character wears a hat, will you need to hide the hair? These are only some of the questions you need to ask, but you need to know the ins and outs of the entity you're working on, so that it can be set up right and work properly with Golaem's Character Maker.

DP: Maya has its own system that could be used for crowds – nParticles. What are the advantages and disadvantages of using Golaem – and where can those two be linked sensibly together?

Nicholas King: nParticles is what I first used to create crowds when Golaem wasn't imple-

mented in the department. It worked well for cards of plates that we shot on set, or very simple interaction and "brains" for each of the entities. Being able to create locomotive animations or transitions between different behaviours was too complex if even possible. Currently, I find a huge advantage of the fact that Golaem uses Maya's native particle system. For instance, I'm working on a personal project where I have thousands of soldiers who I want to combine and morph into one giant soldier. I'm able to emit particles along the surface of a giant soldier who could be doing some action, and with around 15 lines of MEL-Script, I'm able to query the particles that Golaem's entities are running on and have them move their way to these new particles, with offset and easing. All while this is happening, I can activate a physicalized behaviour on Golaem's entities and have their hip joint not get effected, so that their limbs will be flying and hitting each other like a ragdoll while my giant soldier is doing his thing. It's really a sight to see.



DP: Are there corners one can cut to speed up the pipeline?
Nicholas King: Absolutely, and it's fun to explore them and find them yourselves. One amazing feature that was introduced recently was Golaem's Simulation Cache Library. With this feature, you're able to create simulated crowd assets that are organized for you in this little window. Say you have to populate a city street and you have access to animations of people walking, leaning against the walls, smoking a cigarette, having conversations with each other, selling something on the street. Now typically, you would need to create a complicated crowd setup where these entities would need to be assigned each of these animations depending on the zones they are in or some sort of trigger to get these behaviours going. This would require a heavy scene and it can easily get messy with multiple crowd fields. With Golaem's Simulation Cache Library, I could create asset scenes where each scene would hold one behaviour needed, like people walking down the sidewalk in a straight line, passing each other, another would be a few variations of people conversing with each other, etc. You can bake these out and add them to your Simulation Cache Library. Now I can go to the 5 or 10 shots needed to populate the streets, and literally drag and drop each of these behaviours. It will create a crowd proxy and you're ready to go. Coupled with the Cache Layout tool that I mentioned earlier, you can create a completely complicated crowd scene in minutes once your library is set up.

DP: You are scripting with MEL a lot – what are the connections you build between Maya and Golaem, and how much work is that?
Nicholas King: I've always used MEL to bridge attributes together within Maya, it's a quick solution to make things do stuff without having to go too deep under the hood. Since Golaem uses Maya's particle system, it comes very naturally to access custom or built-in attributes, drive the particles controlling your crowd, or to even query them in order to set triggers.

DP: Are there any learning resources out there you would recommend to a new user, besides the Golaem-Website?
Nicholas King: Honestly, the biggest help that I got were the tutorials done on Golaem's Youtube channel and online resource. However, there is an active Google Groups community on their website as well that you can poke around in to troubleshoot problems and share some of your work. One of the main reasons I started my Youtube channel was to share some tips and tricks that involved Golaem, but I have slowly transitioned out of that and focused more on fun, personal work that I produced whenever I have some free time.

DP: You are sharing a few setups – butterflies, a large library of all kinds of physical active people doing different kinds of sports, and White Walkers. Are you planning to publish further sets?
Nicholas King: Absolutely, I have plans on expanding and sharing my stuff with the community. My plan was to share all of my characters after producing something for my Youtube channel – like the Pokemon, or Star Wars videos. Unfortunately, a lot of the work that I do is protected by copyright laws, so I can only share the ones that I've created from scratch, which is a small few at the moment. You will find all of the sets available on my website, specifically here: **www.nixolas.com/golaem-nx-characters**

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