

SHOTGUN SIGGRAPH 2019



- 9:00 - 9:50AM** Introduction to Shotgun
- 10:00 - 10:50AM** Accelerating Creative Teams with Shotgun Create
- 11:00 - 11:50PM** The Future of Shotgun Platform
- 1:00 - 2:20PM** Developing for Shotgun - An Introduction
- 2:30 - 3:50PM** Developing for Shotgun - Advanced Topics
- 4:00 - 4:50PM** Shotgun Technical Roundtable



github.com/shotgunsoftware/sg-siggraph-2019





Hi all – My name is Tannaz, and I’m excited to be a part of our 2nd annual Shotgun Day at SIGGRAPH. We have a lot of deep dives coming up; lots of information is going to be thrown at you about all the different ways you can interact with Shotgun programatically, dramatically increasing the power of the data you hold there and the workflows you can build around it. I’m going to ease you in gently with a high level overview of what’s available

Where to get today's materials



<https://github.com/shotgunsoftware/sg-siggraph-2019>

AUTODESK



TANNAZ SASSOONI
Street Team Toolkit Specialist

Tannaz has worked in visual effects and animation technology for over 14 years. At Rhythm+Hues Studios, she was a pipeline lead on films such as "The Chronicles of Narnia: The Lion, the Witch, and the Wardrobe" and "Evan Almighty". She worked at Dreamworks Animation for nine years, designing and implementing production workflows for layout, animation, modeling, and cloth and hair artists. Since 2016, she's been a member of the Shotgun Street Team's technical support group, specializing in the Toolkit platform.

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A little about me,

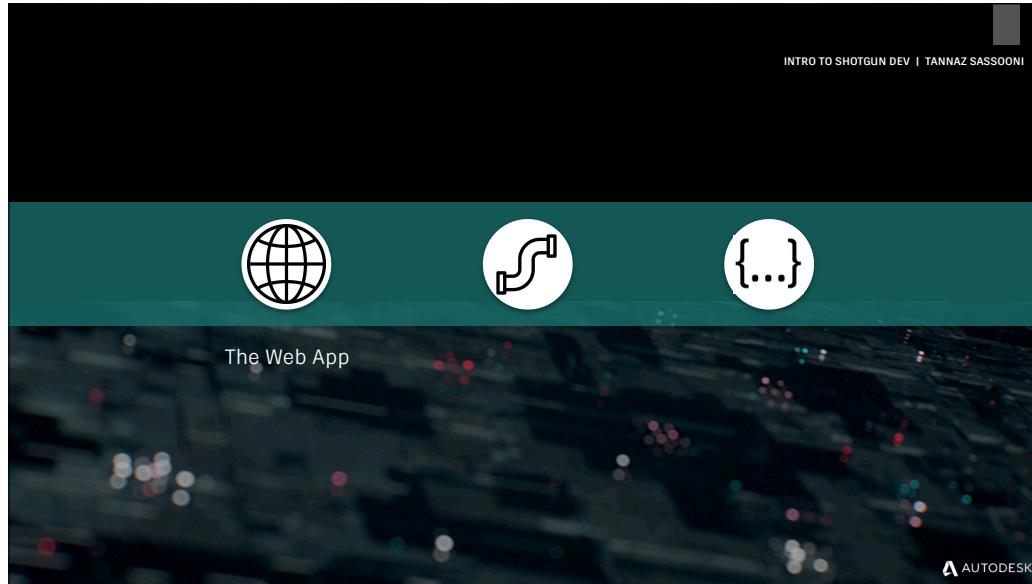
What we will learn



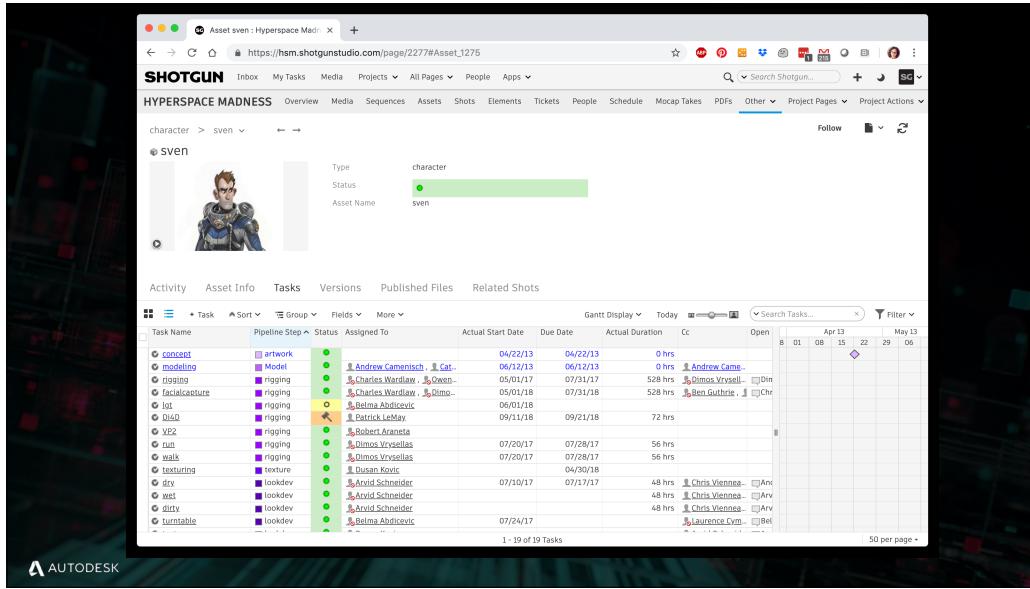
Welcome chit chat. As we go through this series of courses, we're going to take a detailed look at all of the different ways you can write code for Shotgun. But to start, I wanted to introduce you to a few real-world scenarios from production to show you how valuable Shotgun development can be. Over the course of this talk, we'll learn about 1, 2, 3, and 4. But first a little background...



Shotgun is a review and production tracking toolset for VFX, animation, and games teams. It acts as a hub to CENTRALIZE PROJECT DATA, and gives you tools that allow you to unleash the power of that data

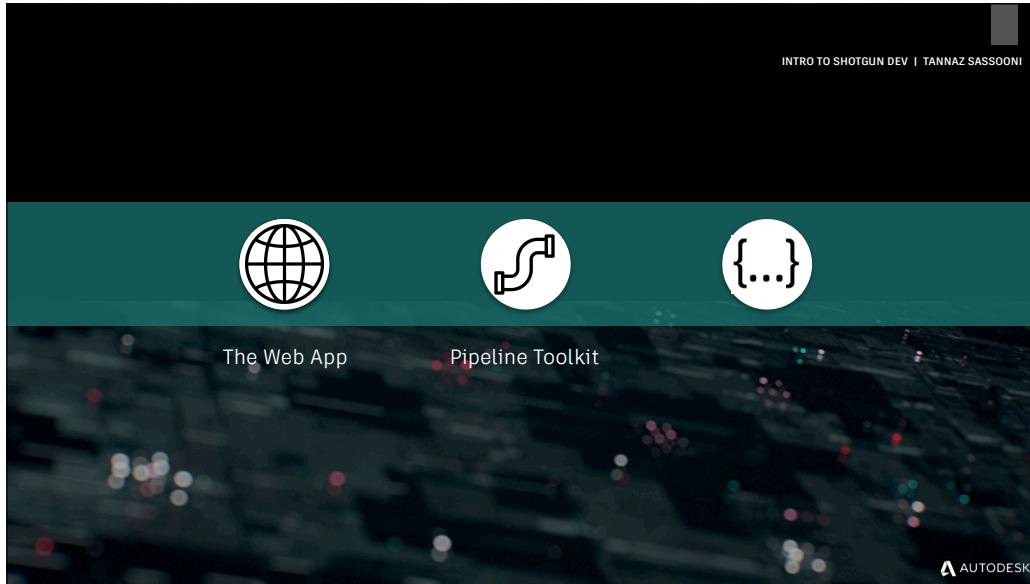


At its base is a web app backed by a PosGres database. The Shotgun web app gives studios a powerful, cloud-based “source of truth” for all the minute details of tracking a CG project

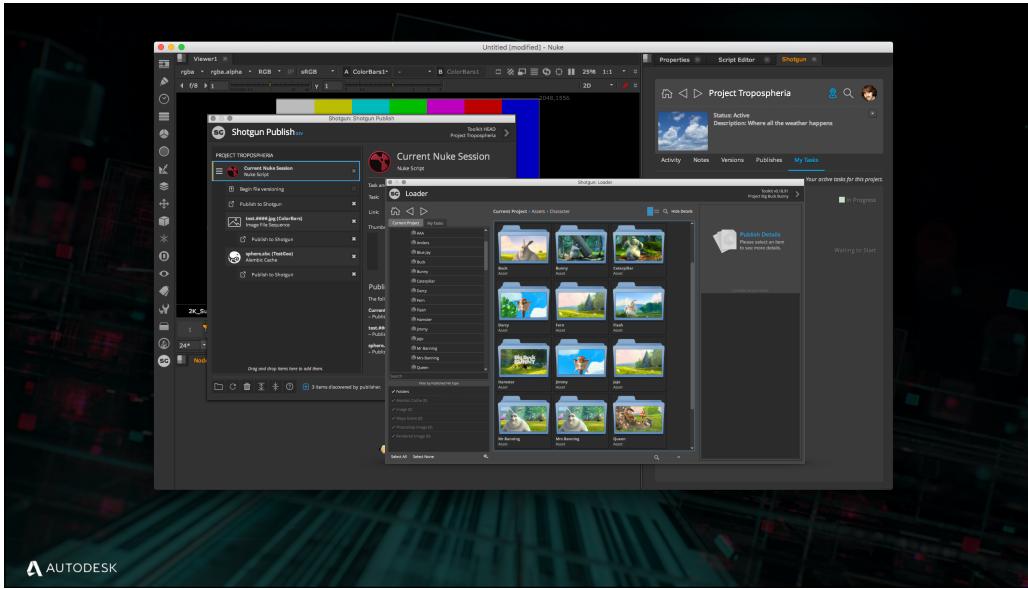


from casting, to tracking progress, to managing assets, you can find everything in the web app.

We started with the web app, but quickly, studios wanted even more from their Shotgun data. Now that we have all this data, why not use it to drive the filenames and directory structure for artists' files on disk? Why not track artist publishes back in Shotgun?

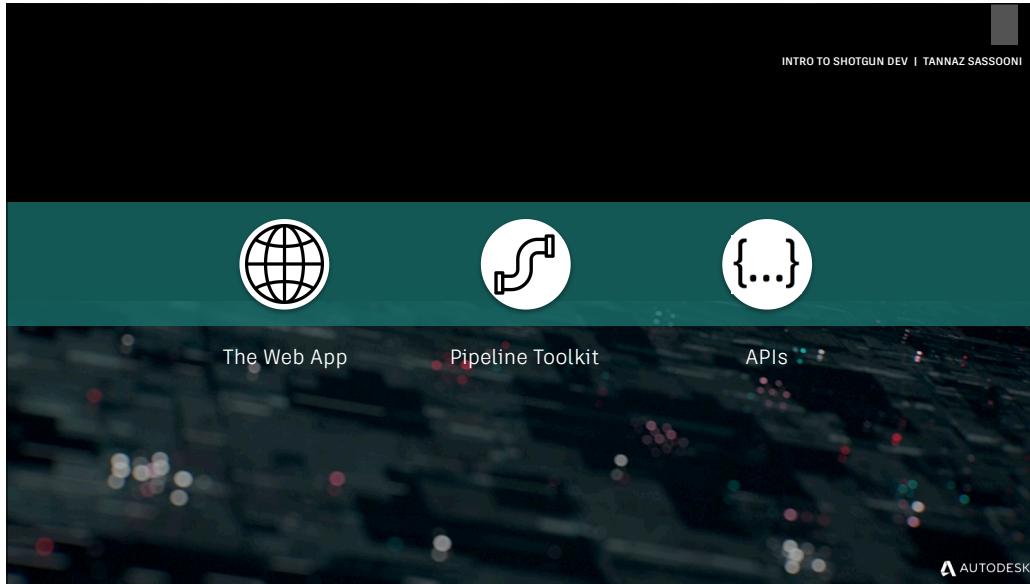


Out of those desires came our Pipeline Toolkit: plugin integrations within artists' tools that extend the Shotgun experience into the artist workflow and give you the foundation for a basic publish pipeline. With Toolkit, an animator can automatically save their Maya file to the right place in the Workfiles app, or when a character rigger is ready to share their latest version of a rig, they can publish it with the Publisher app. It will be tracked in Shotgun and versioned, and downstream artists can pick it up within their own work sessions with the Loader app.



CLICK

Toolkit was a significant extension of Shotgun usage. But, as we've all experienced, studio workflows are not one-size-fits-all – in fact, pretty much no two studios run exactly the same way. Even with the rich customizations that the Shotgun web app and Toolkit offer, sometimes you need to extend functionality even further.



And that's where APIs come in. The various Shotgun APIs give you the power to use the out-of-the-box products as a starting point and customize to your heart's content. You can automate repeatable tasks, build triggers, integrate Shotgun into your studio's existing tools, and more.



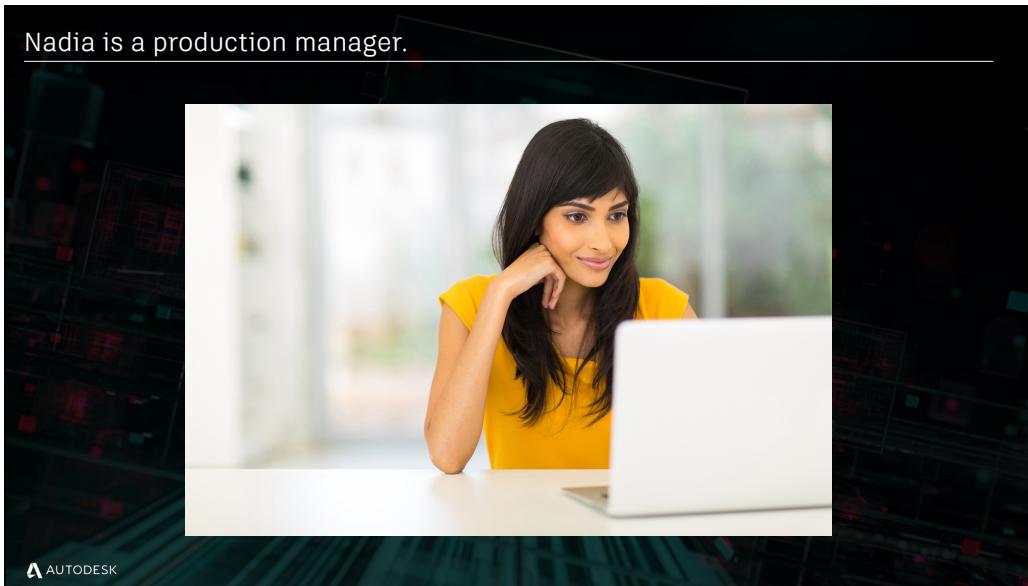
We're going to dive deeper into each of these facets of Shotgun development over the course of the day, but right now, I want to go through some scenarios, in order to touch quickly on how you can solve typical production challenges with the different ways of developing with Shotgun and build better pipelines.



Scenario 1: Nadia

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Nadia is a production manager.



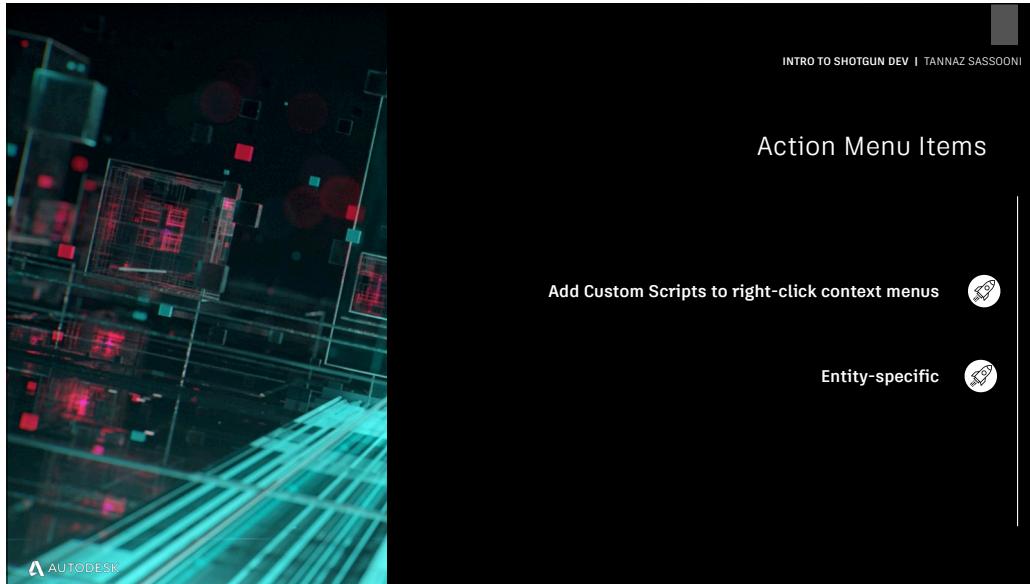
Nadia is a production manager at a vfx vendor studio [explain!]. Her show has some shots in production, and they're ready to begin delivering things to the client. The client has asked to see renders in quicktime in addition to the exr sequences her artists are rendering. They have very specific naming conventions, and she wants to keep all of their media organized on disk in per-shot folders.

Nadia is a production manager.

"I need a button to automate client deliveries, right in Shotgun."

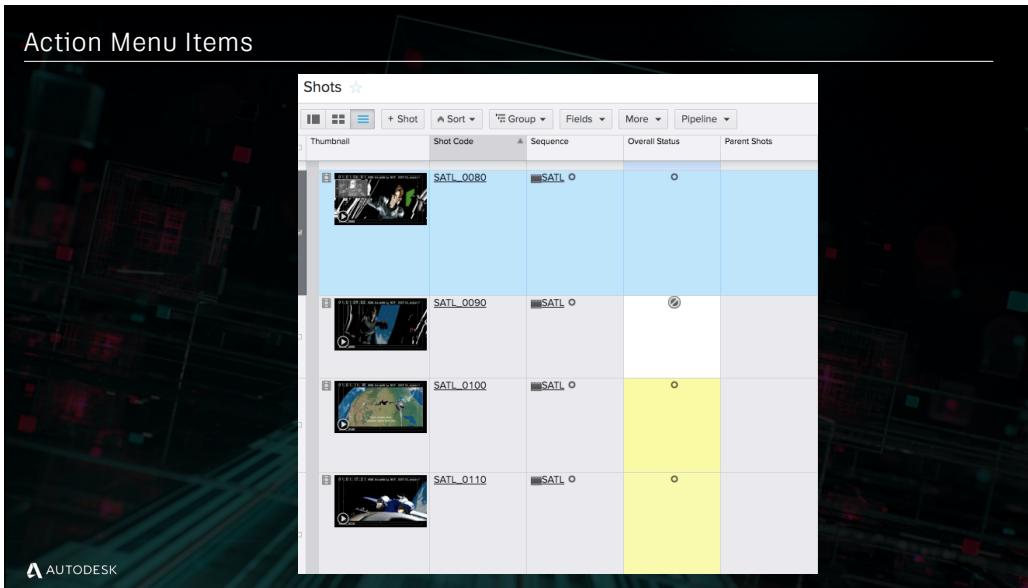
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She's noticed that this manual process is tedious and time consuming for her coordinators, so she wants to provide them with an automated way to do it, right from within Shotgun.



Enter action menu items. With action menu items, or AMIs, you can add custom scripts to the right-click menus on entities, allowing users to run arbitrary code from context menus right within Shotgun

Action Menu Items

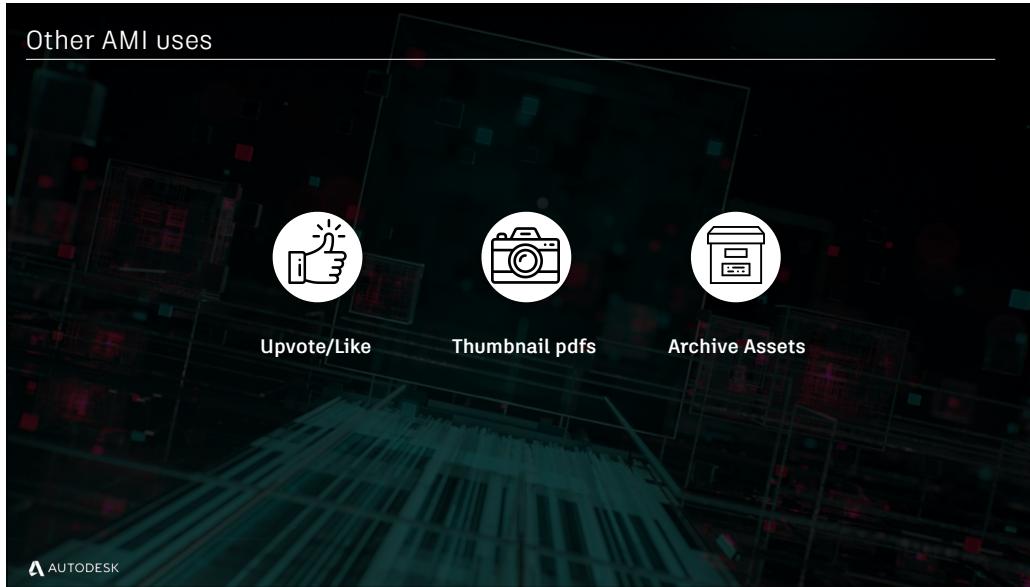


The screenshot shows a software interface titled "Action Menu Items". At the top, there is a toolbar with icons for "Shots", "Sort", "Group", "Fields", "More", and "Pipeline". Below the toolbar is a table titled "Shots" with the following columns: "Thumbnail", "Shot Code", "Sequence", "Overall Status", and "Parent Shots". There are four rows in the table, each representing a shot entity:

Thumbnail	Shot Code	Sequence	Overall Status	Parent Shots
	SATL_0080	SATL	○	
	SATL_0090	SATL	○	
	SATL_0100	SATL	○	
	SATL_0110	SATL	○	

[CLICK] Nadia had her pipeline TD set up an AMI so that when you right-click on a Shot entity in Shotgun, you'll have a "Prep for Client" menu item. When you choose it, the final exr file sequence for the shot will be converted to quicktime, it will copy and rename both the exrs and the quicktime to match the client's naming convention, and it will place these copies in a per-shot folder within a designated client outbox folder. I'll mention before we move on that in the second half of this session, Patrick will be demoing an AMI that takes advantage of our REST API to automate client deliveries. Not exactly like this, but..

Other AMI uses

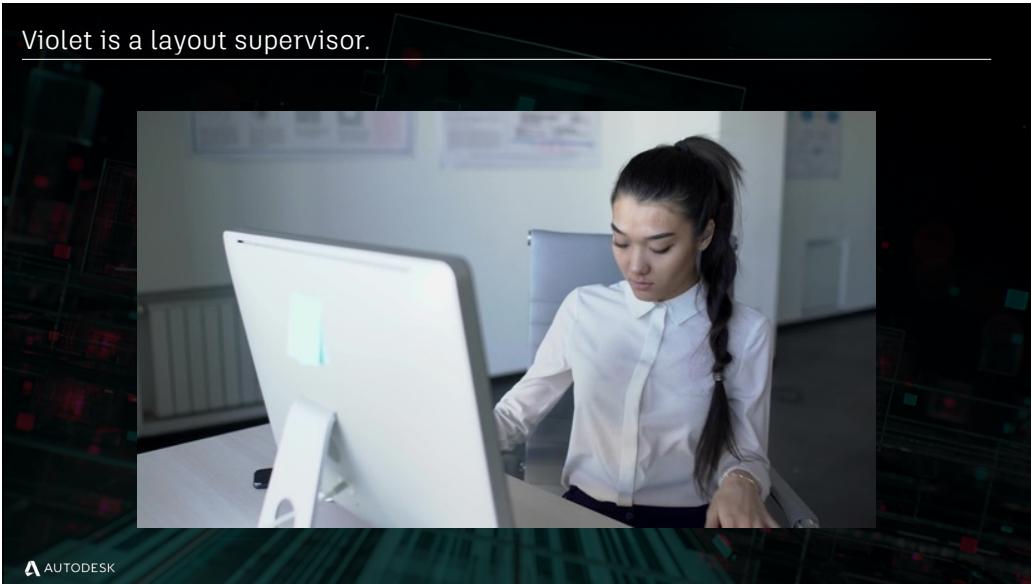


AMIs are super useful; you might also use AMIs for
Upvote/like system
Generate thumbnails pdf from selection
Archiving old assets



So now that Nadia's all set with her AMI solution, let's continue.

Violet is a layout supervisor.



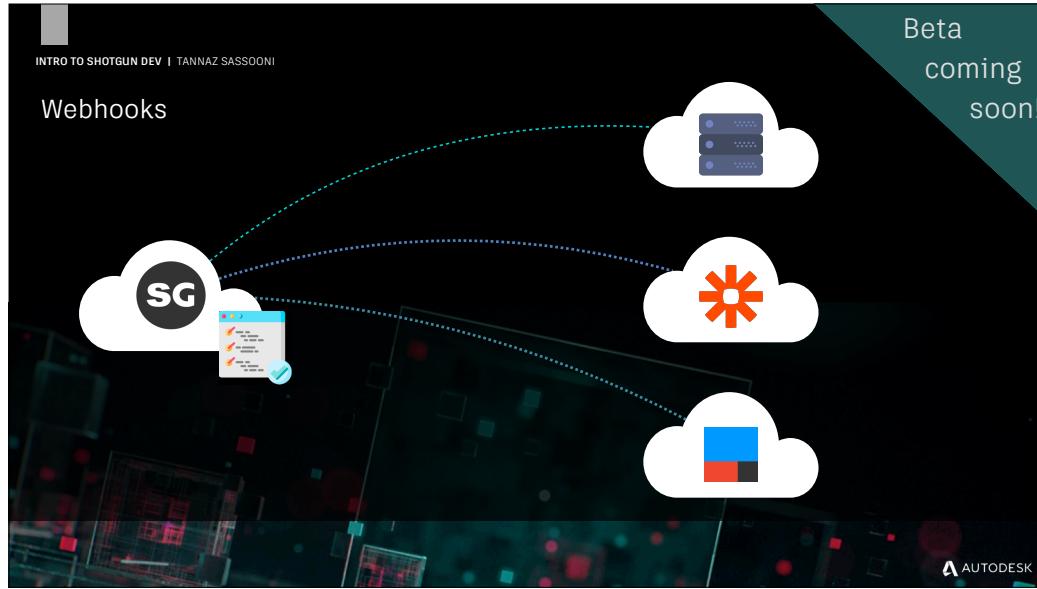
Violet is a layout supervisor on an animated feature. Her artists are rapidly going through shots, and currently, she's got a PA spending time going through individually and switching the Anim task on each shot to "Ready to Start" every time the Layout task is set to "Final".

Violet is a layout supervisor.

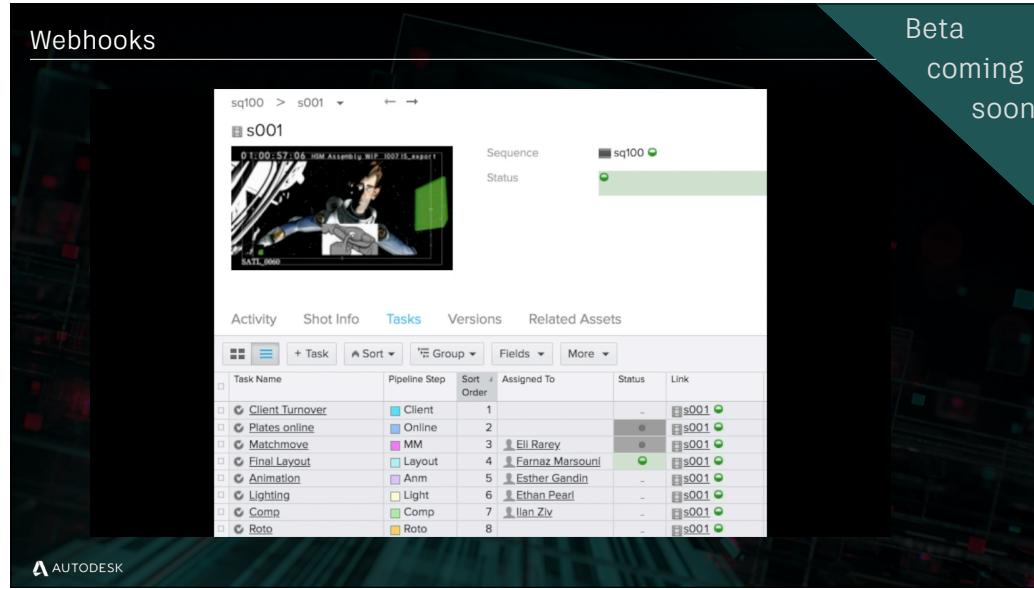
"I need tasks to be set to Ready to Start as soon as the upstream task is finaled, without any extra steps."

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She wants this process to be automated, but it would defeat the purpose if her PA had to run an AMI just to set the status on Anim. It should just happen automatically, she thinks to herself, whenever a Layout task is finaled.



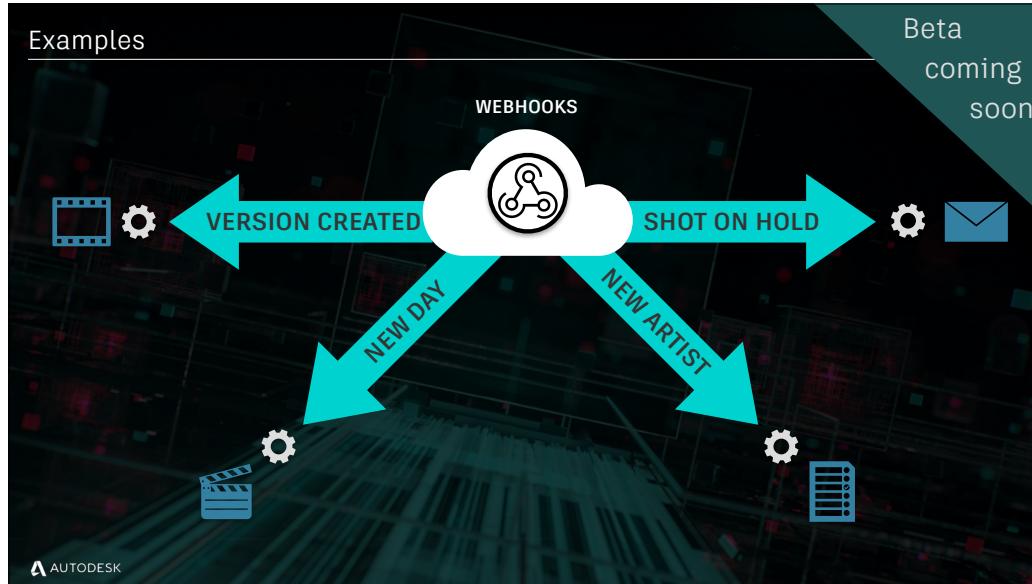
For Violet, we have webhooks. Webhooks enable a notification to be sent any time an event that is subscribed to takes place on your site; An http request is issued to the endpoint that you define, with a payload of information about the event. You can then create custom code that uses this payload to do cool stuff.



CLICK

So in Violet's case, her TD can create a web hook that will run any time the Layout task on a shot has its status set to "Final", and use the web hook's payload to run a script that will automatically set the status of the corresponding animation task to "Ready to Start"

I'll mention here that in the next session, Brandon Ashworth will be demoing exactly this. He'll use Webhooks to implement a "status flipper", so you'll see how to set it up in detail.



You can do a lot with webhooks. You could..

Notify artists if a shot goes on hold or OOP

[CLICK](#)

Add Versions to smart playlists at creation time

[CLICK](#)

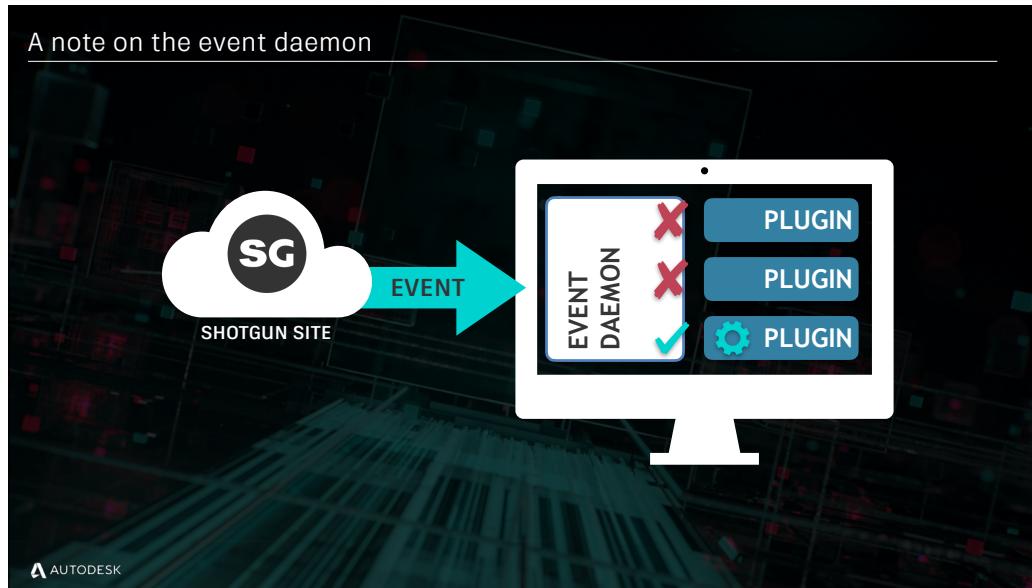
Create a daily playlist for the team to see their colleagues' latest work

[CLICK](#)

Assign artists to a project when they're assigned to a task on the project

In general, Webhooks allow you to connect your shotgun data to other websites. Any service, internal or external, that accepts a web hook payload can be connected.

A note on the event daemon



While we're talking a lot about webhooks at SIGGRAPH this week, we actually already had a framework that allows you to trigger logic based on events that take place in your Shotgun site. Webhooks is a more modern, standardized solution that gives you the ability to create rich integrations with other online tools, but there are still some cases where a local event daemon makes more sense: if your studio doesn't have internet access, if you prefer not to expose incoming connections to your studio, or if you are concerned about exposing a tool that can access your production file system to other internet sites, the event daemon framework is for you.

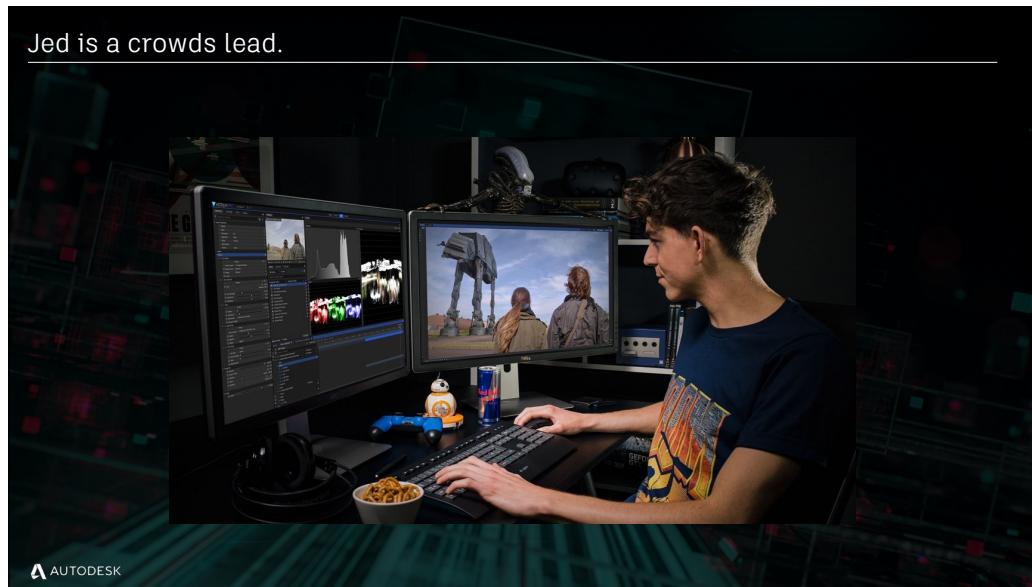


If you're interested in participating in the web hooks beta, contact us at this email address.



Violet's all set with her webhook. Let's talk about Jed.

Jed is a crowds lead.



Jed is a crowds lead. The animation team on his show is using the Toolkit Publisher to publish animation as Alembic caches.

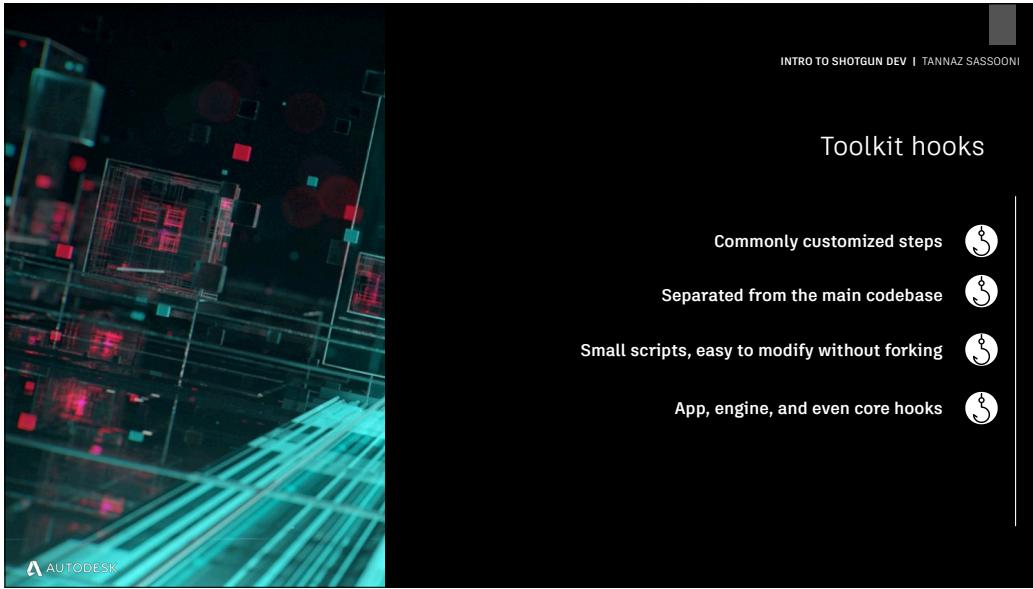
Jed is a crowds lead.



"I need my artists to have on-demand access to FBX representations of all published animation."

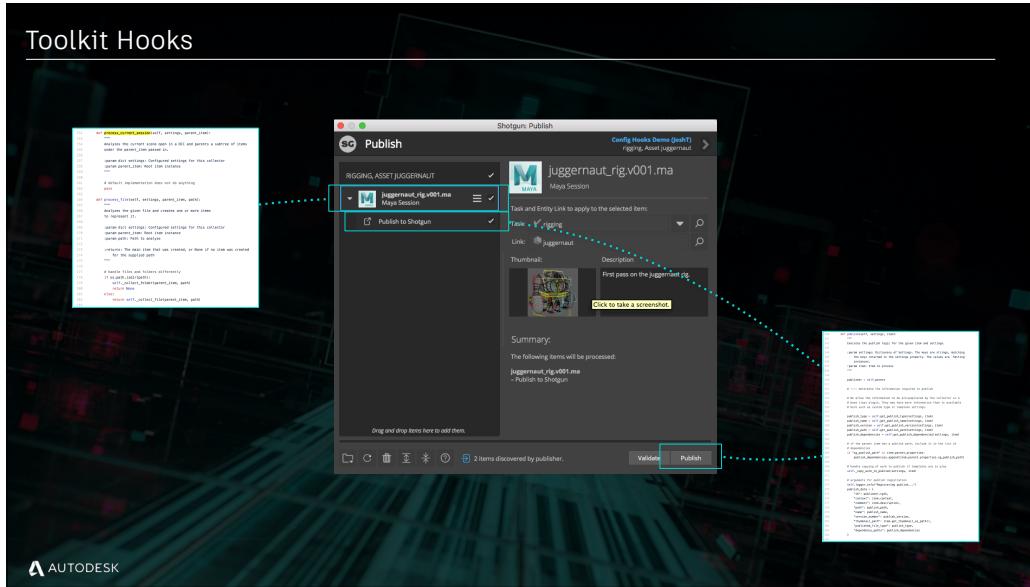
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He wants his crowds artists to be able to pull animation into their Massive sessions, which requires the geometry to be in the FBX file format. He wants the FBX files to be readily available, without artists having to take time to generate them as needed.



Enter hooks. Our Toolkit apps have been designed with “hooks” – bits of logic that are separated from the main codebase, so that they can be easily overridden and extended.

Toolkit Hooks



talk about Publisher plugin architecture. So for Jed, he can have his TD modify the Publish plugin for animation so that it generates fbx files from their alembic caches whenever they publish new animation.

Other uses for Toolkit hooks



File conversion to/from in-house formats



Add needed commandline args or set environment variables when you launch software



Add an action to the Shotgun Panel to generate a reference image plane in Maya

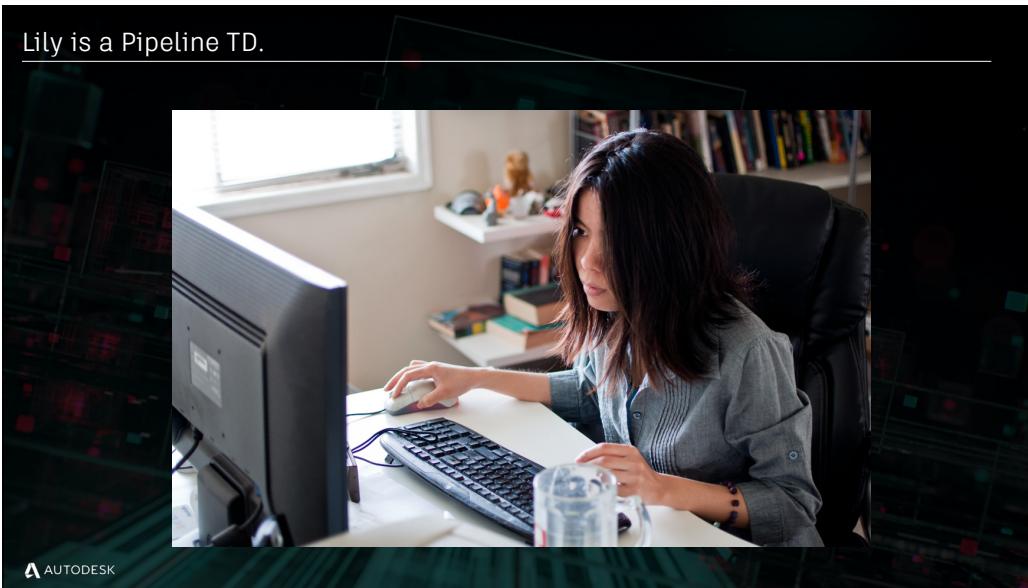


Examples of hooks



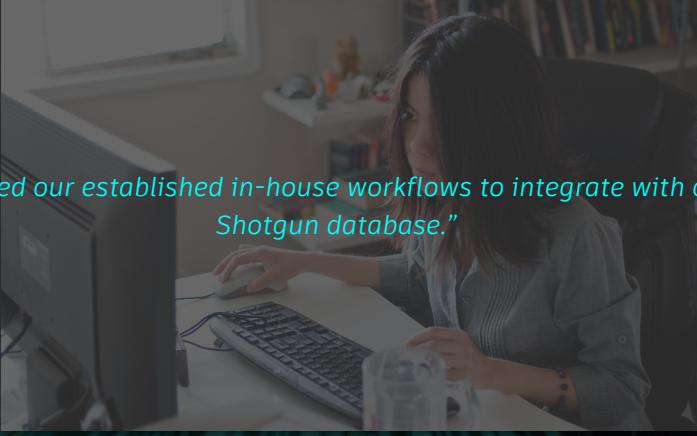
Finally, let's talk about Lily.

Lily is a Pipeline TD.



Lily is a pipeline TD. She works at a large studio, with lots of custom code and established user experiences.

Lily is a Pipeline TD.



"I need our established in-house workflows to integrate with our Shotgun database."

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For her, the challenge is getting her studio's in-house tools to access and modify her Shotgun data, and writing apps that fit into her existing pipeline, but use Shotgun data



For Lily, we have a small handful of APIs, as well as tools to get her started on custom app development.

APIs

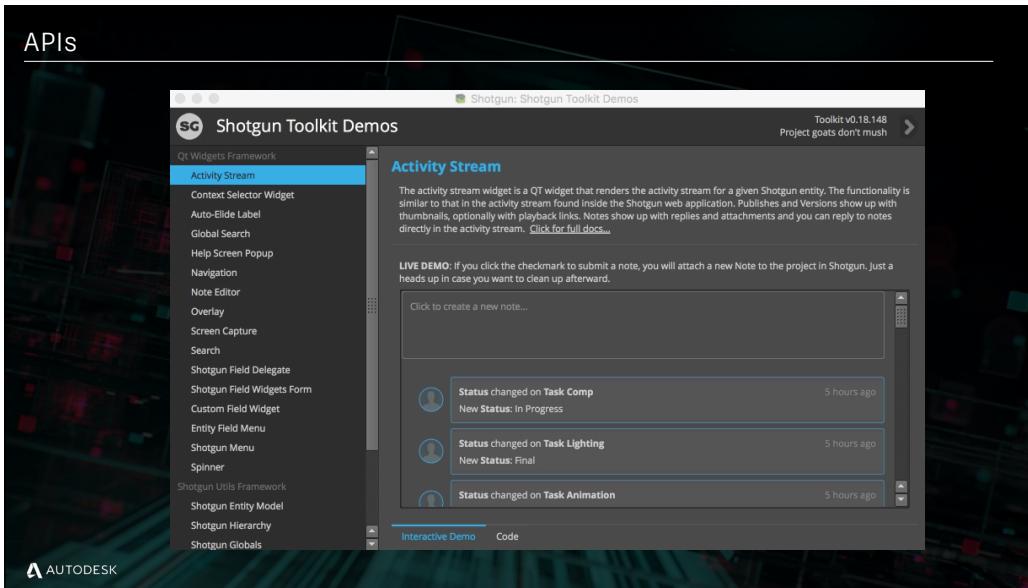


We start with a simple Python-based API for accessing Shotgun and integrating with other tools. CRUD methods give you raw access to data going in and out of Shotgun

REST: Last year, we released a REST API. It has functional parity with the Python API, but gives you full data access to Shotgun for cases when the python API isn't the right choice, for example if you want to write something in javascript, go or C++. In the second half of this session, Patrick will be doing a demo that utilizes our REST API.

On top of that, the Toolkit platform allows pipeline TDs to quickly build configurable tools that can run across applications

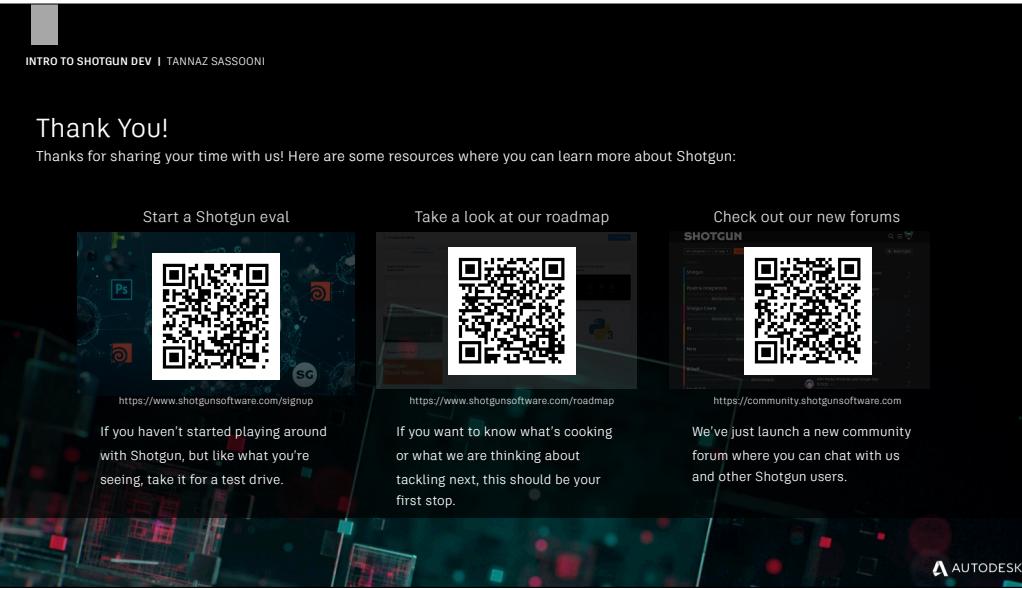
APIs



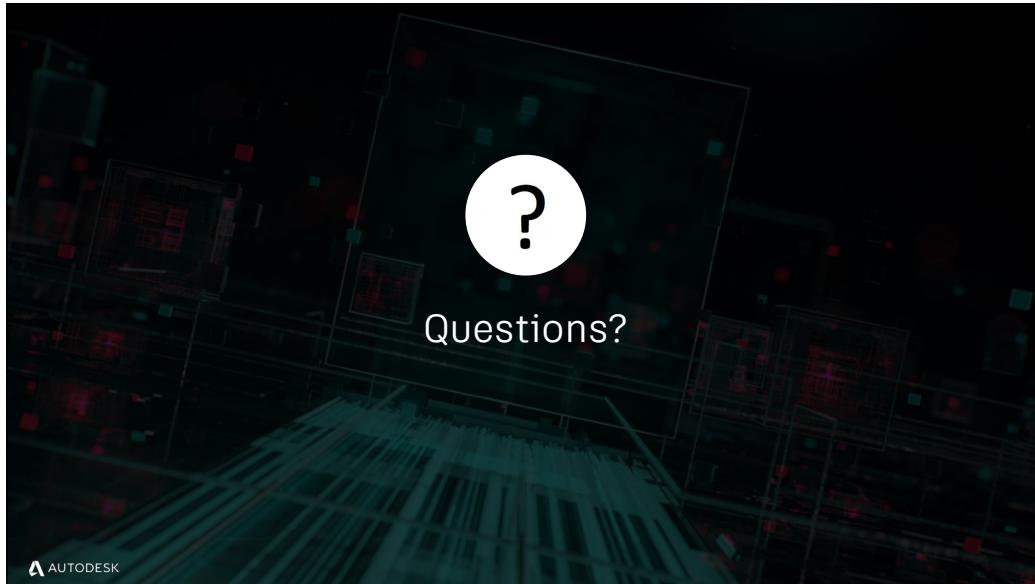
Since Lily needs to write some custom apps, we offer a couple other helpful starting points: we have a starter app, which will give you a framework to build your app upon, and the demo app, [CLICK] which includes examples of common UI elements [CLICK] as well as their underlying code.



So, with all these scenarios, the big takeaway is that with these touchpoints, Shotgun can give one TD the power of ten. With AMIs, webhooks, and Toolkit hooks, we've laid the groundwork, so that very quickly, you can extend and integrate Shotgun workflows, both for production management and artists, without having to start from scratch. And even when you are starting from scratch, you have rich, intuitive APIs to get you going. And you're not even starting from scratch, because you have the Starter App and the Demo App to help you take your first steps.



Before I open it up to questions



In the second half of this session, Patrick Boucher is going to walk you through some examples of using our APIs, but before I hand it over to Patrick, are there any questions?

