

How to add 3D viewing to your website

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Class summary

You've invested so much time in creating fantastic 3D designs, isn't it frustrating that your website is all in 2D? Not anymore! You can now embed striking, interactive models into your web page.

We'll start with some demos to show you what is possible, and then we'll take you step by step through the simple process of creating your own 3D-enabled website.

To get the most out of this class, a basic knowledge of programming and/or web development would be helpful, but it's not essential.

Key learning objectives

At the end of this class, you will be able to:

- Locate resources and information about Autodesk 3D web viewing technology
- Embed the viewer into your own web page on your website
- Translate your 2D & 3D models for use with the viewer
- Control the viewer using features exposed through it's client-side API

About the Presenter

Philippe Leefsma



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Philippe has a master's degree in Computer Sciences. He carried his studies in Paris at I.S.E.P and in USA, at Colorado School of Mines.

*He joined Autodesk 8 years ago where he works as developer consultant for the **Autodesk Developer Network**. He supports several Autodesk desktop products APIs and he's also investigating various technologies around the Cloud & Mobile area to share his experiences through a devblog:*

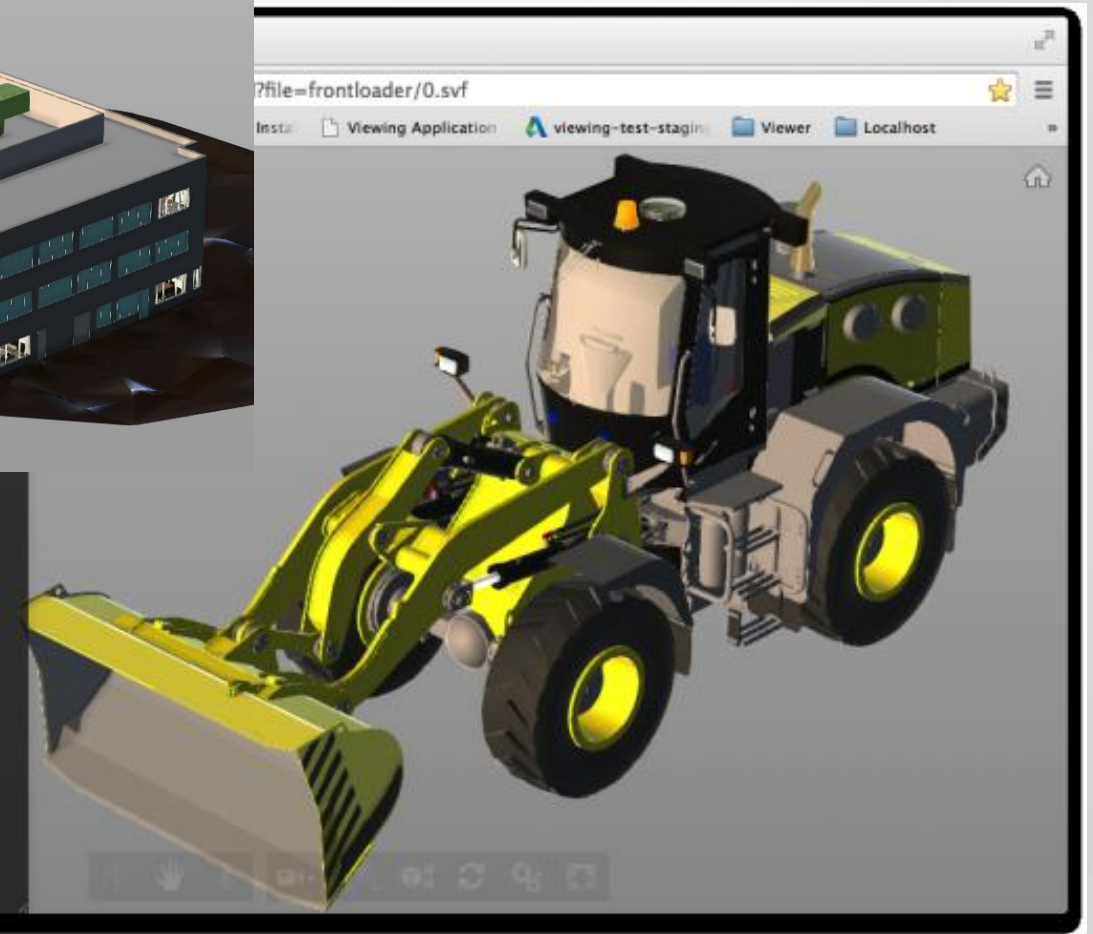
http://adndevblog.typepad.com/cloud_and_mobile

Autodesk View & Data Web Services

Why adding **3D viewing** to your web application?



```
V138.24.01.010:1  
V138.24.01.010:2  
V138.24.01.010:3  
V138.24.01.010:4  
  > _Cylinder PK46.14.01.000:1  
  > PK46.25.00.010:1  
PK46.25.00.008:1  
PK46.25.00.007:1  
  > _Cylinder PK46.14.01.000:2  
PK46.21.00.006:1  
PK46.21.00.006:2  
  > PK46.21.00.030:1
```



How do you share your design today?



View & Data - Mission Statement

- **Platform** that enables access to **design**
- Focused on **data**
- Provides access for **anyone, anywhere**
- Helps collaborate on **projects**



Design



Data



People



Projects

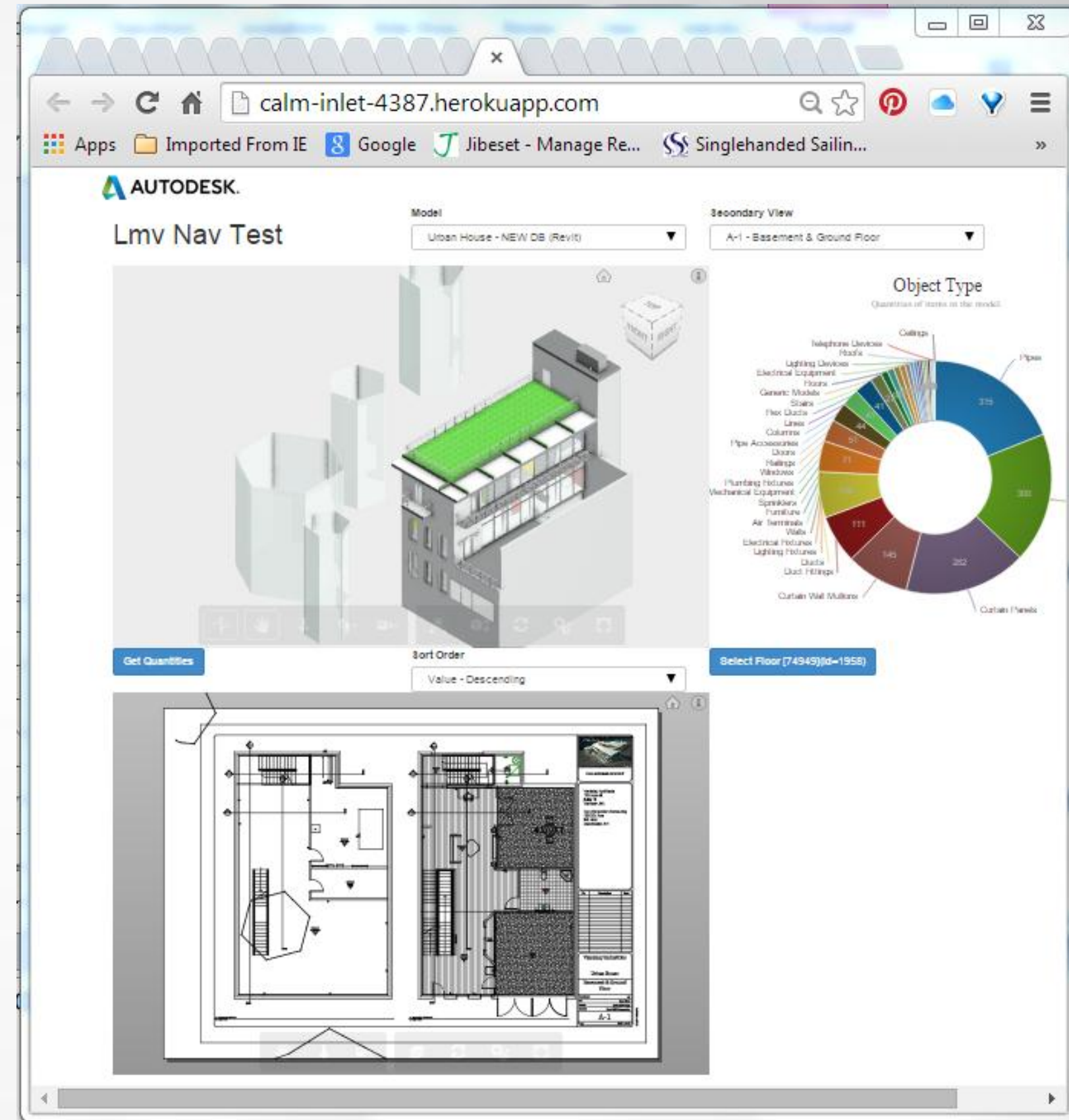
View & Data - 2D/3D

■ 3D functionality

- Entities selection, properties, zoom, pan, orbit, isolate, focus, highlight
- Access to meshes, materials, ...

■ 2D functionality

- Select, properties, xdata zoom, pan, isolate, focus, highlight



View & Data - Technology

- Browser based - **Zero Client**

- HTML5
- JavaScript
- WebGL
- three.js

HTML



JavaScript

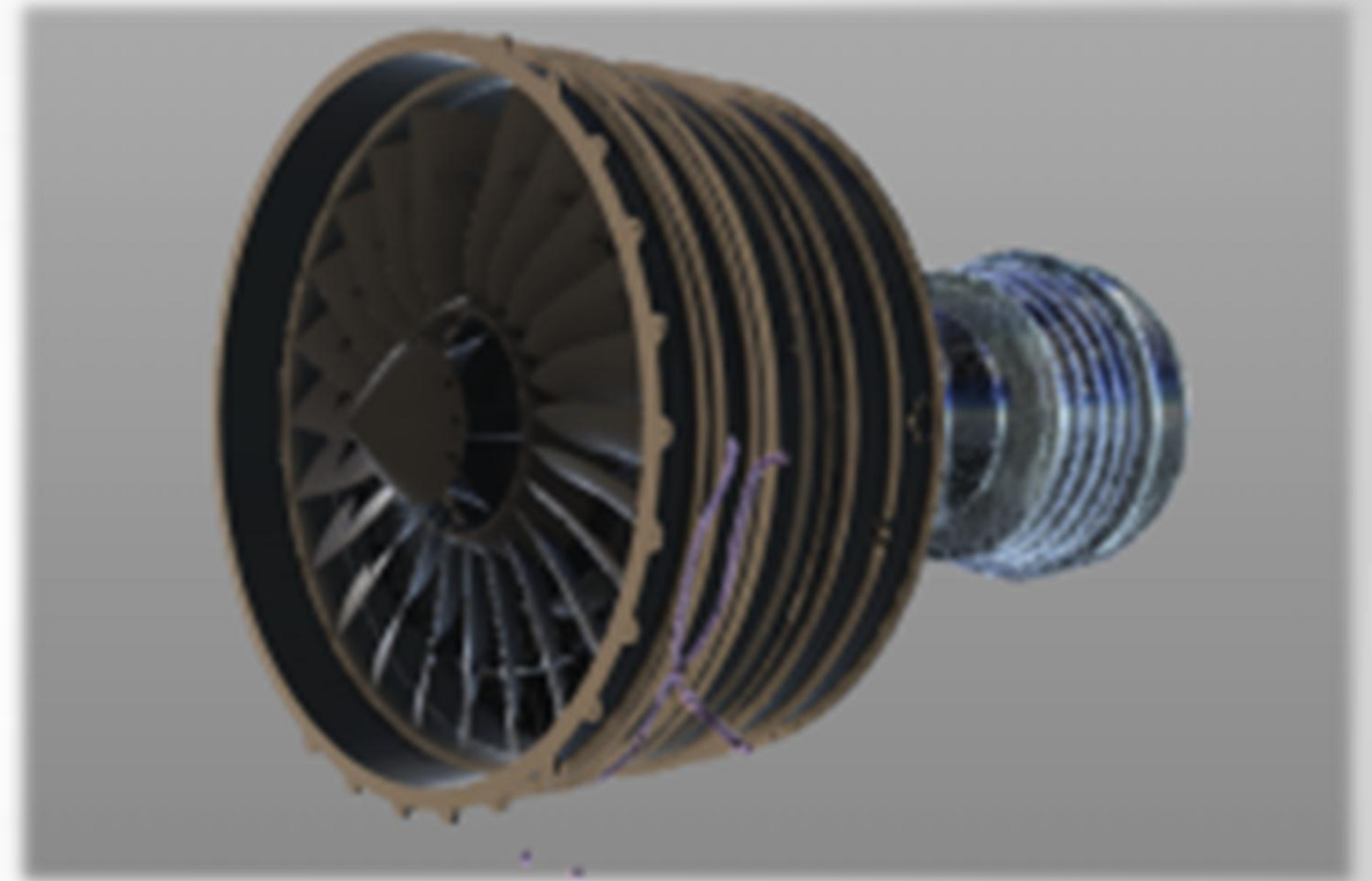
WebGL

THREE.JS

View & Data - File Formats

- **100+** File formats supported

ipt, neu, stla, stl, jt, skp, prt, dwf, sldasm, step, dwg, zip, nwc, model, sim, stp, ste, f3d, iges, dwt, catproduct, igs, sldprt, cgr, 3dm, sab, obj, cam360, exp, wire, ige, rcp, dae, x_b, 3ds, rvt, g, sim360, iam, asm, dlv3, x_t, session, xas, xpr, catpart, stlb, nwd, sat, fbx, smb, smt, dwfx...



View & Data - Browser Compatibility

Requires a **WebGL** compatible browser

- Chrome 18.0+
 - on desktop, Android & iOS 8
- Internet Explorer 11.0+
- Opera 15.0+
- Firefox 4.0+
- Safari 8.0+



View & Data - Highlights

- Stream large models
- Good quality rendering
- Easily embedded
- Data as important as viewing

View & Data - API's

- File management **REST API**
 - Authentication **OAuth 2.0**
 - Upload & Translate files
 - Access rights
 - JSON
- Client **JavaScript API**
 - Control viewer in **HTML5** web pages
 - Based on **WebGL** & **three.js**
 - Access to data, components, camera, ...

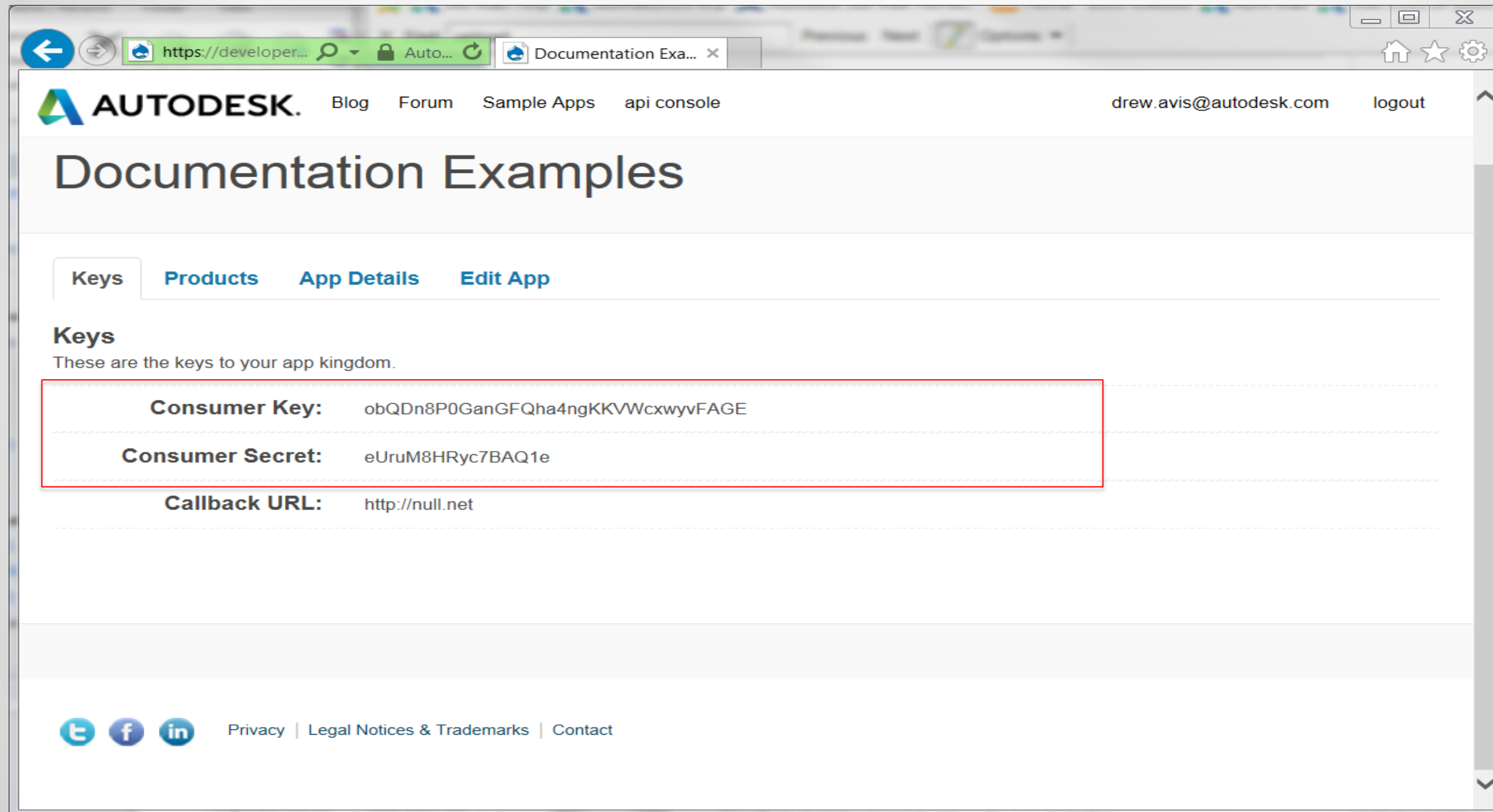


View & Data - Getting Started

<http://developer.autodesk.com>



View & Data - Credentials



The screenshot shows a web browser window with the URL `https://developer.../Documentation Examples`. The page header includes the Autodesk logo, navigation links (Blog, Forum, Sample Apps, api console), and a user profile for `drew.avis@autodesk.com` with a `logout` link. The main heading is `Documentation Examples`. Below it are tabs for `Keys`, `Products`, `App Details`, and `Edit App`. The `Keys` tab is active, displaying the text `Keys` and `These are the keys to your app kingdom.`. A red rectangular box highlights the following credentials:

Consumer Key:	<code>obQDn8P0GanGFQha4ngKKVWcxwyvFAGE</code>
Consumer Secret:	<code>eUruM8HRyc7BAQ1e</code>
Callback URL:	<code>http://null.net</code>

At the bottom of the page, there are social media icons for Twitter, Facebook, and LinkedIn, followed by links for `Privacy`, `Legal Notices & Trademarks`, and `Contact`.

View & Data - Workflow



Step 1 - Register an account/create an application

Step 2 - Get an access token

Step 3 - Create a bucket

Step 4 - Upload an object

Step 5 - Request translation

Access from client



View & Data - Social web presence

- GitHub, Blogs, Forums

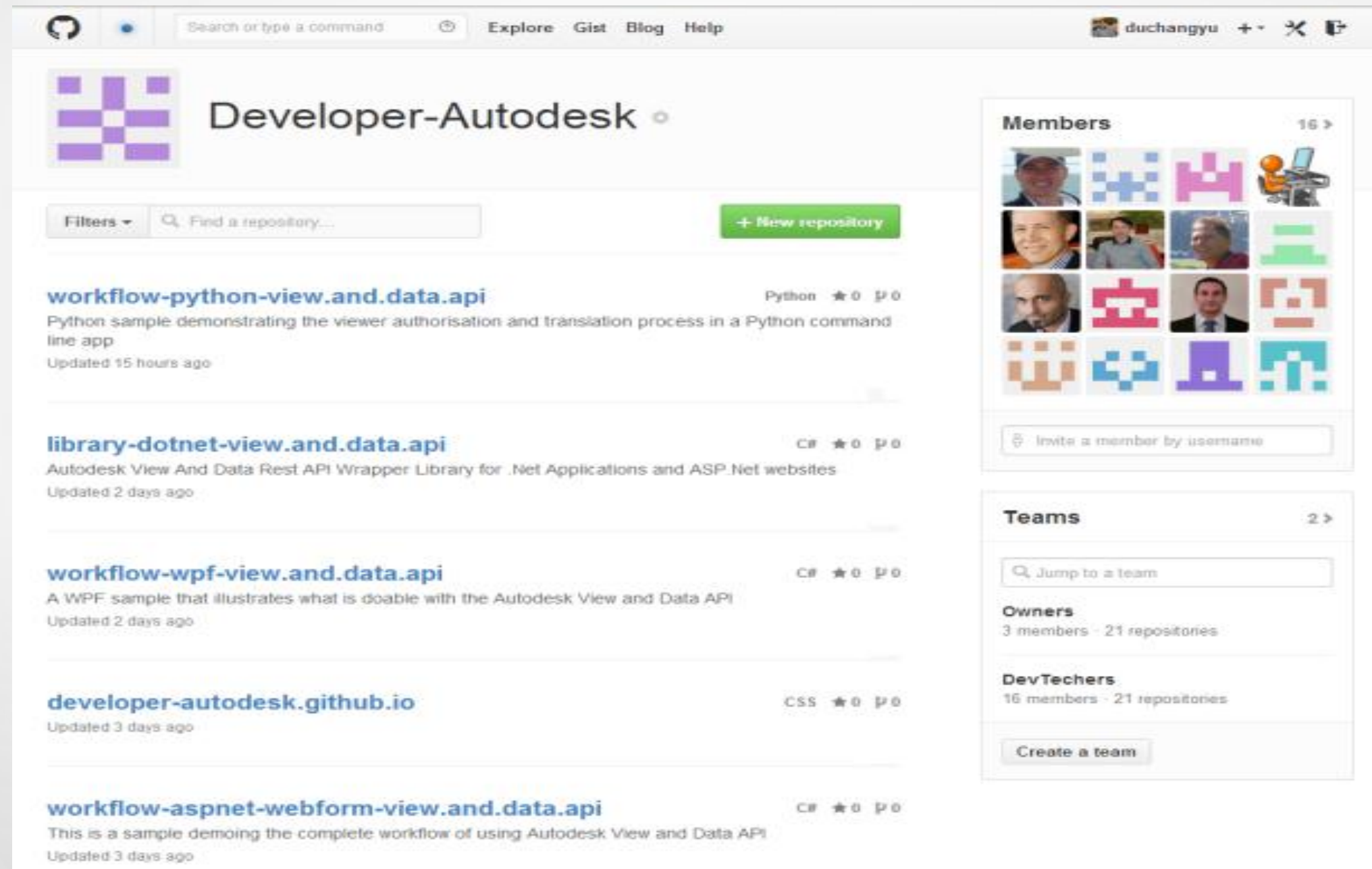
The image displays three overlapping browser windows illustrating the social web presence of the View & Data API project.

- Left Window (GitHub):** Shows the repository page for `Developer-Autodesk / autodesk-view-and-data-api`. It lists 27 commits and a list of client applications such as `client-embedded`, `client-fullstack`, and `client-steampunked-morgan`.
- Middle Window (Blog):** Shows a blog post titled "Autodesk View and Data API Notes" by Jeremy Tammik, dated 10/21/2014. The post discusses a summary of notes from workshops at HackZurich and a presentation by Philippe Leefsma.
- Right Window (Autodesk Community Forum):** Shows the "VIEW AND DATA API" forum page. It features a table of posts with columns for Subject, Author, Kudos, Replies, and Latest. The table lists various posts, including "Welcome to the Autodesk View and Data API forum" and "Viewer samples go live!".



View & Data - Sample Repository

<https://github.com/developer-autodesk>



The screenshot shows the GitHub profile page for 'Developer-Autodesk'. The header includes the GitHub logo, a search bar, and navigation links for Explore, Gist, Blog, and Help. The user's name 'duchangyu' is in the top right. The profile section features the 'Developer-Autodesk' logo and a list of repositories. On the right, there are sections for 'Members' (16 members) and 'Teams' (2 teams). The repository list includes:

- workflow-python-view.and.data.api** (Python, 0 stars, 0 forks, updated 15 hours ago): Python sample demonstrating the viewer authorisation and translation process in a Python command line app.
- library-dotnet-view.and.data.api** (C#, 0 stars, 0 forks, updated 2 days ago): Autodesk View And Data Rest API Wrapper Library for .Net Applications and ASP.Net websites.
- workflow-wpf-view.and.data.api** (C#, 0 stars, 0 forks, updated 2 days ago): A WPF sample that illustrates what is doable with the Autodesk View and Data API.
- developer-autodesk.github.io** (CSS, 0 stars, 0 forks, updated 3 days ago):
- workflow-aspnet-webform-view.and.data.api** (C#, 0 stars, 0 forks, updated 3 days ago): This is a sample demoing the complete workflow of using Autodesk View and Data API.

The 'Members' section shows a grid of 16 member avatars. The 'Teams' section shows two teams: 'Owners' (3 members, 21 repositories) and 'DevTechers' (16 members, 21 repositories). A 'Create a team' button is at the bottom.

View & Data - Live Demos

- <http://gallery.autodesk.io>
 - Source on Github
<https://github.com/Developer-Autodesk/workflow-gallery-view.and.data.api>
- <http://timeliner.autodesk.io>
 - Source on Github
<https://github.com/Developer-Autodesk/client-timeliner-view.and.data.api>
- <http://checkoutmymodel.autodesk.io>
 - Source on Github
<https://github.com/Developer-Autodesk/workflow-aspnet-webform-view.and.data.api>
- <http://sapdemo.autodesk.io>
 - Source on Github
<https://github.com/Developer-Autodesk/integration-sap-view.and.data.api>

View & Data – Get Started Today!

- **Simply embed 3D in your blog or website**
 - <http://gallery.autodesk.io>
- **Request your credentials**
 - <http://developer.autodesk.com>
- **Give it a try with the Viewer QuickStart Guide**
 - <https://fast-shelf-9177.herokuapp.com>
- **Get inspired by our samples**
 - <https://github.com/Developer-Autodesk>
- **Stay tuned**
 - http://adndevblog.typepad.com/cloud_and_mobile
- **Get help**
 - <http://forums.autodesk.com/t5/view-and-data-api/bd-p/95>

