X3D Browsers

Web3D Webinar 8/5/2020

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Acknowledgements

Evolving material since 2018 with :

Johannes Behr
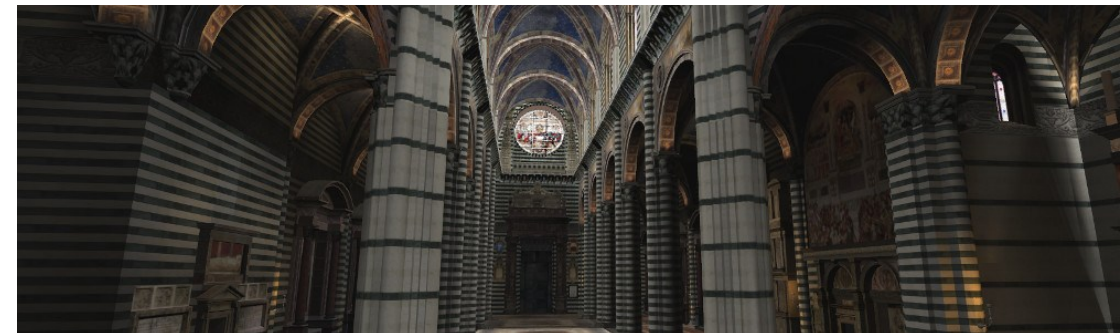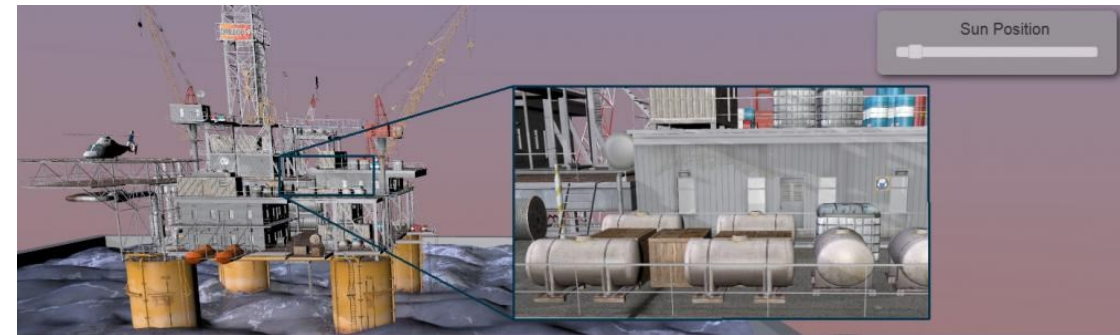
Timo Sturm

Uwe Woessner

Standards make the Web go round:
Ecosystem of Engines

Runtime approaches:

1) Installed engines import, export, and render X3D and VRML with different node Profiles

2) Javascript Polyfills ('native' in browser):

- X3DOM: https://www.x3dom.org/

- X_ite: http://create3000.de/x_ite/

X3D Engines (installed)   (July 2020)

- Instant Reality
- Covise/OpenCover
- V-slam.org (Unity, Hololense)
- Castle Game Engine
- FreeWRL
- H3D (Haptics, py)
- Octaga
- Xj3D
- BS Contact
- Coin3D
- ...

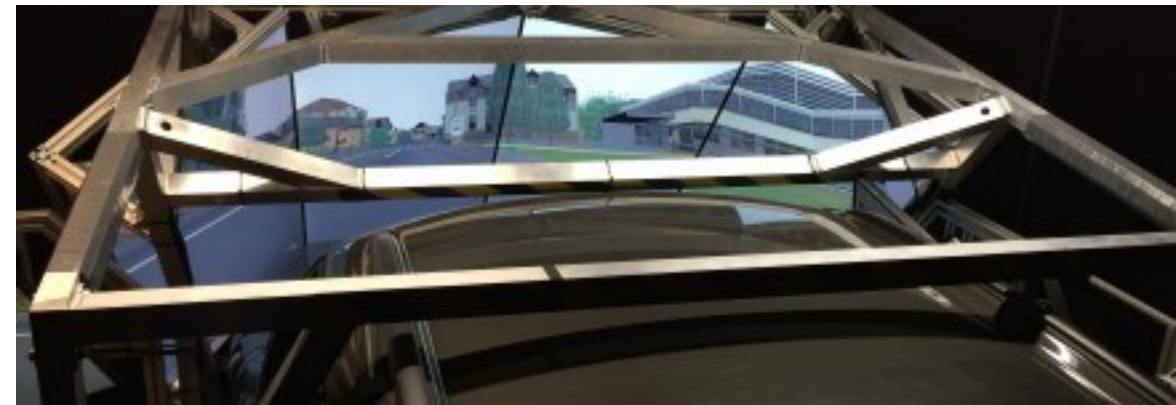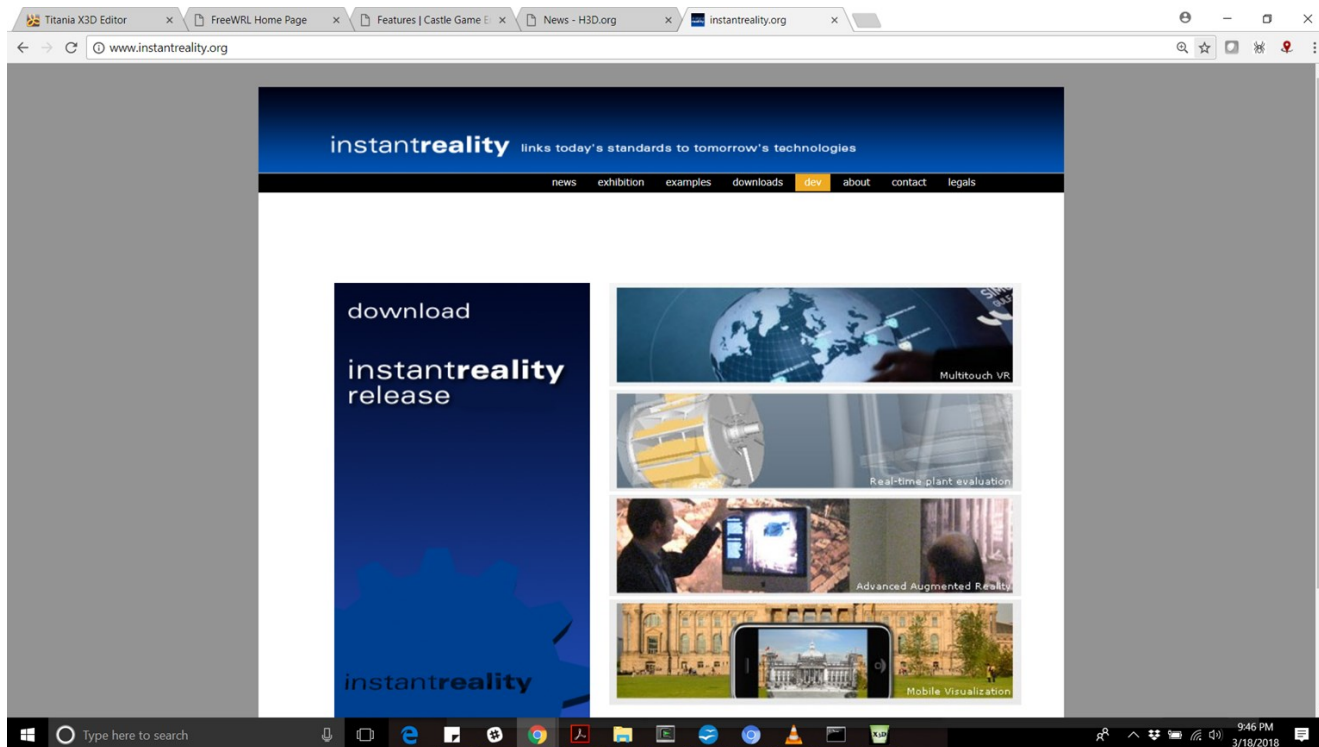### *HTML5 + WebGL Javascript Polyfills:*

- X3DOM
- X_ITE
- NIH 3D Viewer

...

Instant Reality

http://www.instantreality.org/

Free (w/ Logo) ; includes **aopt**

Going Immersive @ VT

Instant Player Engine files:

- Stereo Windows and Screens
- 3DUI as Javascript

InstantIO components:

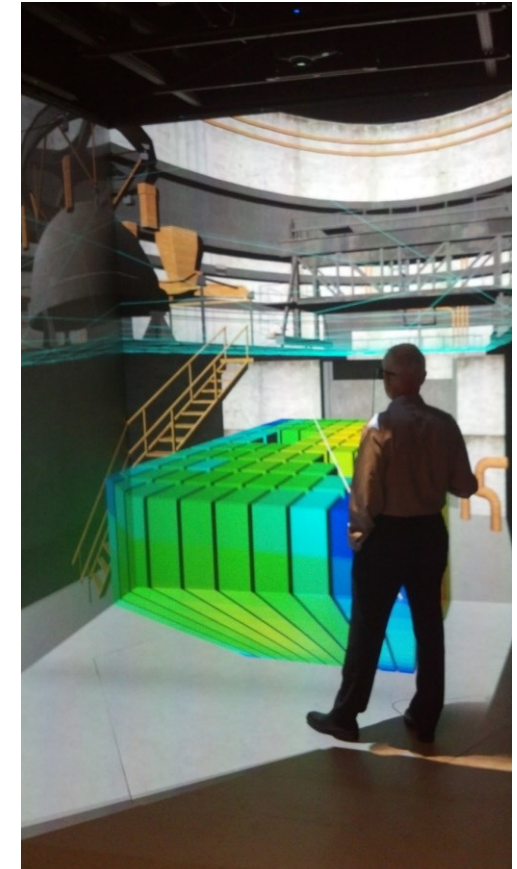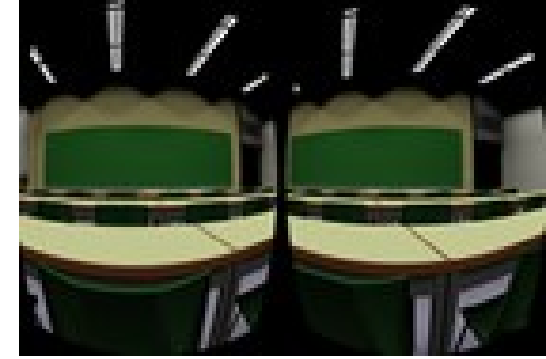- ART head, wand data
- DTK/TrackD (Intersense)
- Navigator

…

Immersive X3D Examples

A variety of implementation efforts:

- Hololense, Vive with V-Slam
- WebVR _ X3DOM: Oculus, Cardboard
- Multi-projector CAVEs (same X3D file)

- Samsung GearVR, Google Pixel
- VR Hackathons

- *WebXR next!*

Covise/OpenCover

https://www.hlrs.de/covise/support/

https://github.com/hlrs-vis/covise

Open Source!

v-Slam

https://www.v-slam.org/
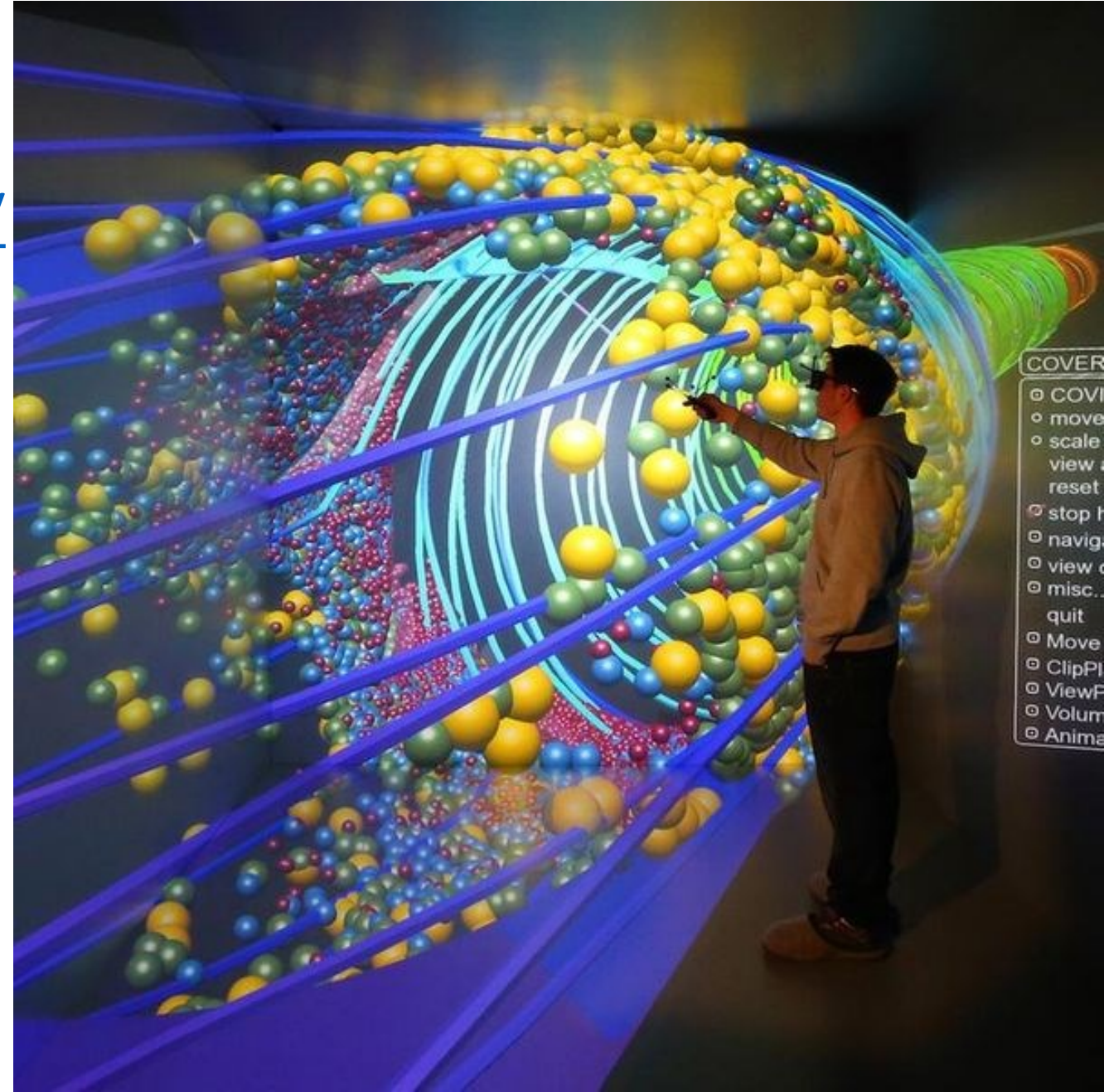
Open Source!

Built w Unity

Server-side
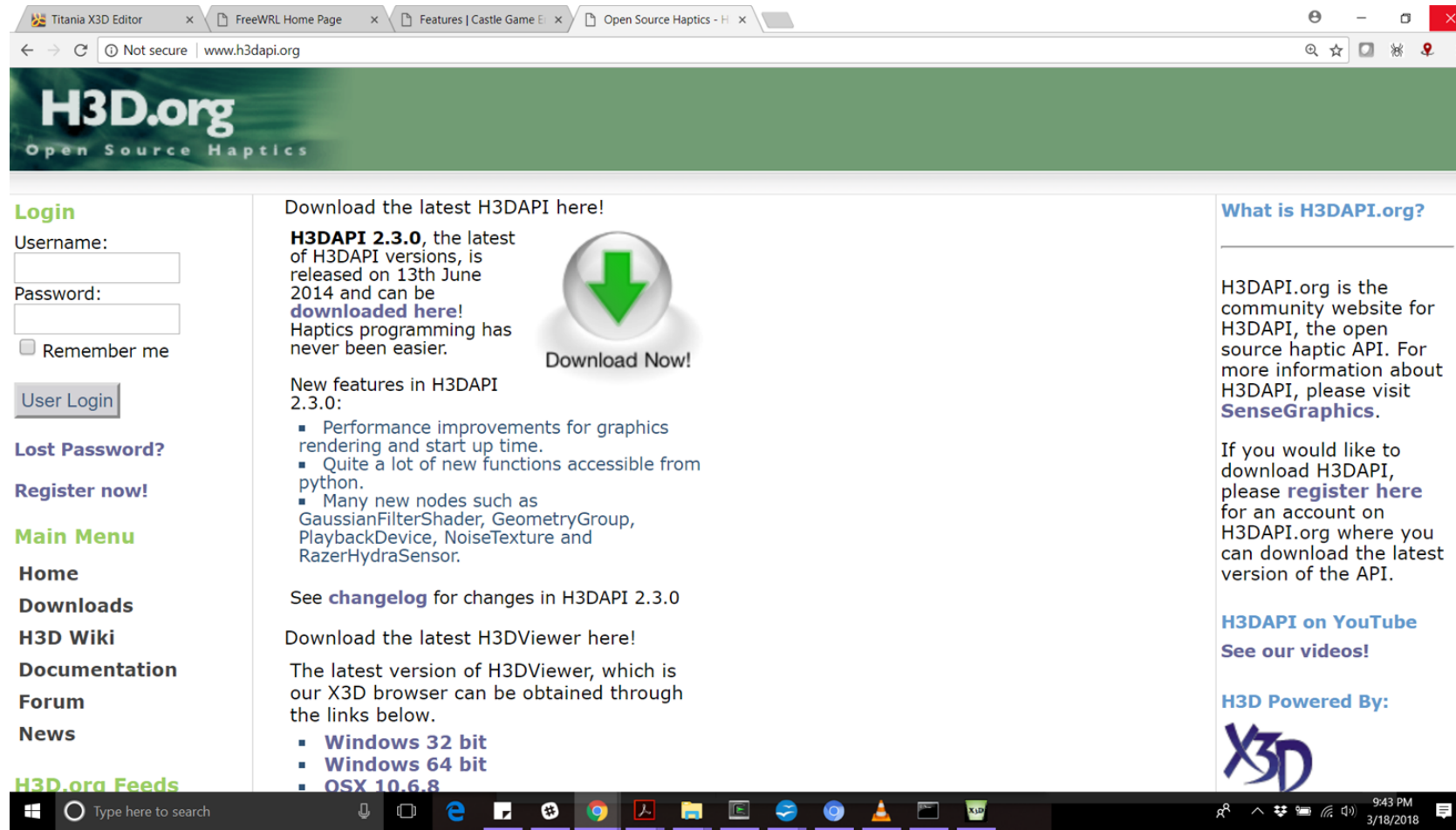
Collab
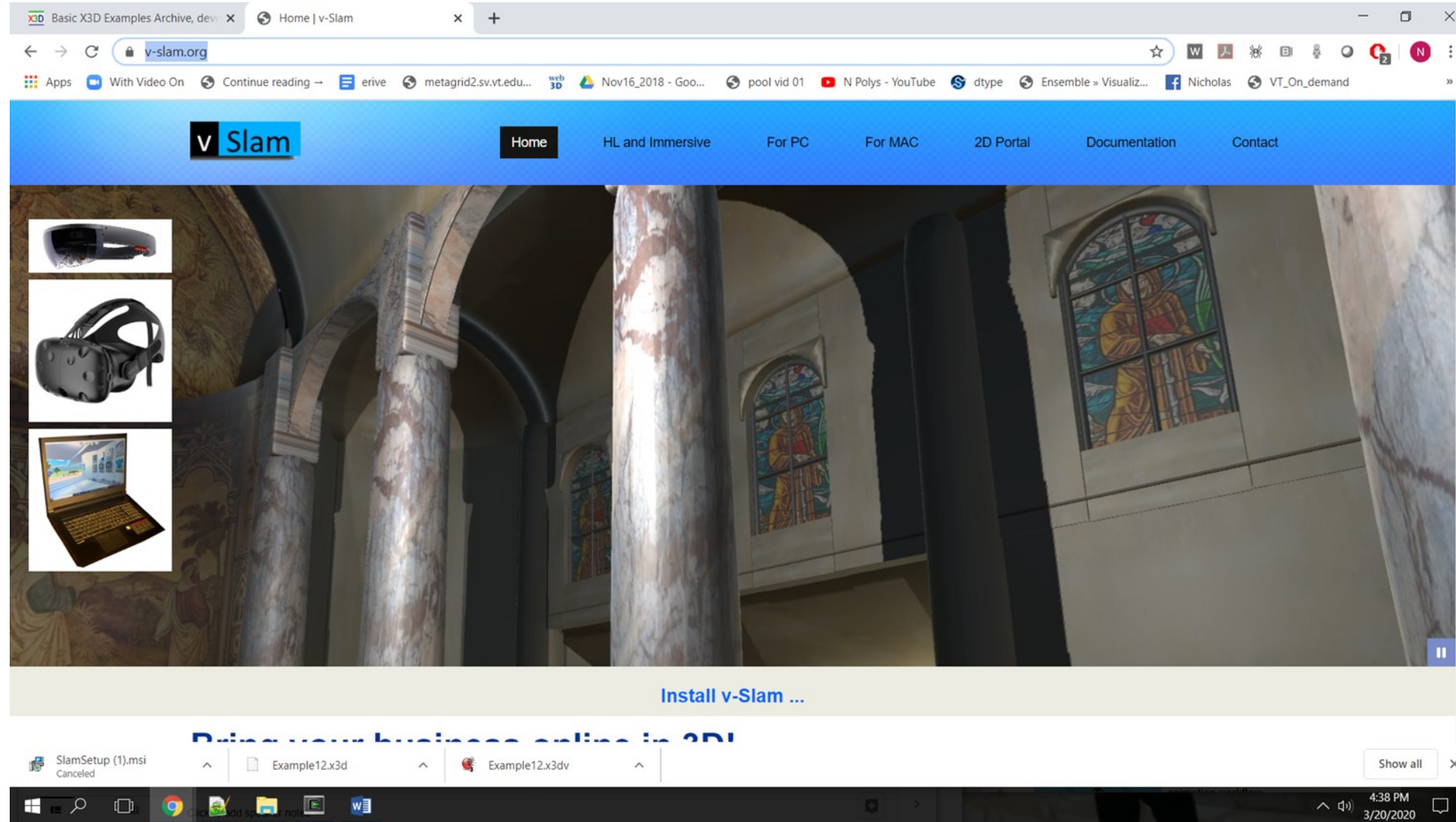
H3D.org - Haptics

X3D + Volume Component (MEDX3D)

Open Source!

Other Notables

Xj3D - Open Source X3D & VRML Browser (Java) https://sourceforge.net/projects/xj3d/

Coin3D - Open Source C++ for Inventor, Supports VRML and X3D
https://github.com/coin3d

OctagaVS - https://www.octagavs.com/   X3D & VRML free (w / Logo)

GearVR - X3D content; X3D store opened China for Samsung

Castle Game Engine (More Later!)

https://castle-engine.io/   *Open Source!*

View3DScene supports

Model conversion including

FBX, OBJ, X3D, VRML

FreeWRL (More Later!)

http://freewrl.sourceforge.net/
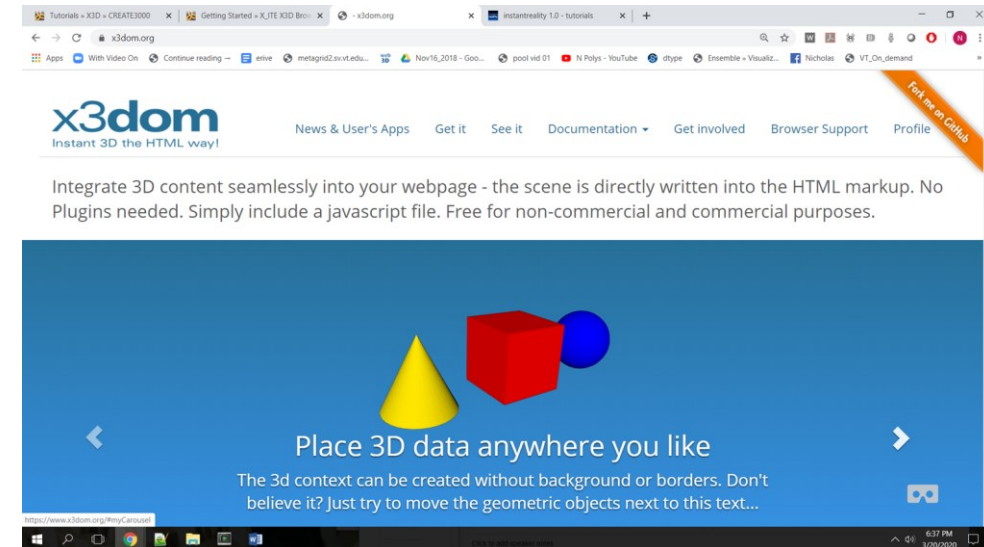   *Open Source!*

JavaScript 'Shims'

HTML5 + WebGL

Javascript Polyfills who know X3D:

- X3DOM
- X_ITE
- NIH 3D Viewer
- NB: there are basic loaders for three.js:
  built-in VRML and X3D by JSON

X3DOM.org (More Later !)

- **Integrates 3D content seamlessly into your webpage**

- **Access & manipulate Nodes per DOM-API**

- **No Plugins needed**

- **Simply include a javascript file**

- **Open-Source**

- **Free for non-commercial and commercial purposes**

See Examples

https://www.x3dom.org/examples/

https://examples.x3dom.org/gltf2/

X_ITE

TITANIA LINUX X3D Editor

http://create3000.de/

See Examples!

X_ITE Examples

Engage!

- Standards make it work!
- Members drive features and Standards
- Expert Community
- Early Access to specifications
- Outreach opportunities

www.Web3D.org