

Three-Dimensional (3D) Printing Applied to General Public Use & Public Work Use

Lecture 2 Three-Dimensional (3D) Printing Software by Raymond Lam, Sc.D.



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Software

- ❖ Software is required to design and create a three-dimensional (3D) model before the model is manufactured by 3D printing.

- ❖ There are two main types of 3D modeling software:
 1. Commercial 3D modeling software that requires a paid license.
 2. Free 3D modeling software that requires no fee.

Best 3D Modeling Software by All3DP.com, 1

Name	Level	OS	Price
3D Slash	Beginner	Windows, Mac, Linux, Raspberry Pi or Browser	Free, Premium from \$2-20 per month
Clara.io	Beginner	Browser	Free, Premium from \$10-100 per month
Moment of Inspiration (Mol)	Beginner	Windows and Mac	Free, \$295 full licence
SelfCAD	Beginner	Browser	Free 10-day trial, \$14.99 per month
SketchUp	Beginner	Windows and Mac	Free
Tinkercad	Beginner	Browser	Free
Blender	Intermediate	Windows, Mac, Linux	Free
DesignSpark Mechanical	Intermediate	Windows	Free, \$835 (w. all add-ons)
FreeCAD	Intermediate	Windows, Mac, Linux	Free
LibreCAD	Intermediate	Windows, Mac, Linux	Free
MakeHuman	Intermediate	Windows, Mac, Linux	Free
Meshmixer	Intermediate	Windows, Mac	Free
NanoCAD	Intermediate	Windows	Free

Best 3D Modeling Software by All3DP.com, 2

OpenSCAD	Intermediate	Windows, Mac, Linux	Free
Sculptris	Intermediate	Windows, Mac	Free
3ds Max	Professional	Windows	\$1,620 per year
Cinema 4D	Professional	Windows, Mac	\$94.99 per month
Modo	Professionals	Windows, Mac, Linux	\$1,799, or \$599 per year
Mudbox	Professional	Windows, Mac	\$10 per month
Onshape	Professional	Windows, Mac, Linux, iOS, Android	\$1,500 per year
Poser	Professionals	Windows, Mac	\$199
Rhino3D	Professional	Windows, Mac	\$995
ZBrush	Professional	Windows, Mac	\$39.95 per month, or \$895 one-time
AutoCAD	Industrial	Windows and Mac	\$210 per month
CATIA	Industrial	Windows	Educational License \$99, professional tiers on request
Fusion 360	Industrial	Windows, Mac	\$60 per month
Inventor	Industrial	Windows, Mac	\$250 per month
Solidworks	Industrial	Windows	\$1,295 per year
Siemens NX	Industrial	Windows	From \$7,500

Free 3D Modeling Software by All3DP.com

Software	File Formats	Platform
TinkerCAD	OBJ, SVG, STL, PART	Browser
Vectary	OBJ, DAE, USDZ, GLB, glTF, STL	Browser
SketchUp Free	SKP, STL, PNG	Browser
Meshmixer	AMF, MIX, OBJ, OFF, STL, 3MF	Windows, Mac, Linux
FreeCAD	STEP, IGES, OBJ, STL, DXF, SVG, DAE, More	Windows, Mac, and Linux
Sculptris	OBJ, GOZ	Windows and Mac
3D Slash	3dslash, OBJ, STL, FBX, Collada, glTF	Windows, Mac, Linux, Raspberry Pi or Browser
Wings 3D	3DS, FBX, OBJ, DAE, LWO, WRL, RWX, STL, XML	Windows, Mac, Linux
Leopoly	OBJ, STL	Browser
BlocksCAD	DXF, OFF, STL	Browser

Popular 3D Modeling Software

❖ Commercial Software

1. SolidWorks
2. AutoCAD

❖ Free Software

1. Tinkercad

Tinkercad, free 3D software, is selected to be software for the module.

Instructions on using the Tinkercad are depicted in the following 6 videos.

Tinkercad Lesson 1 by Promo Ambitions



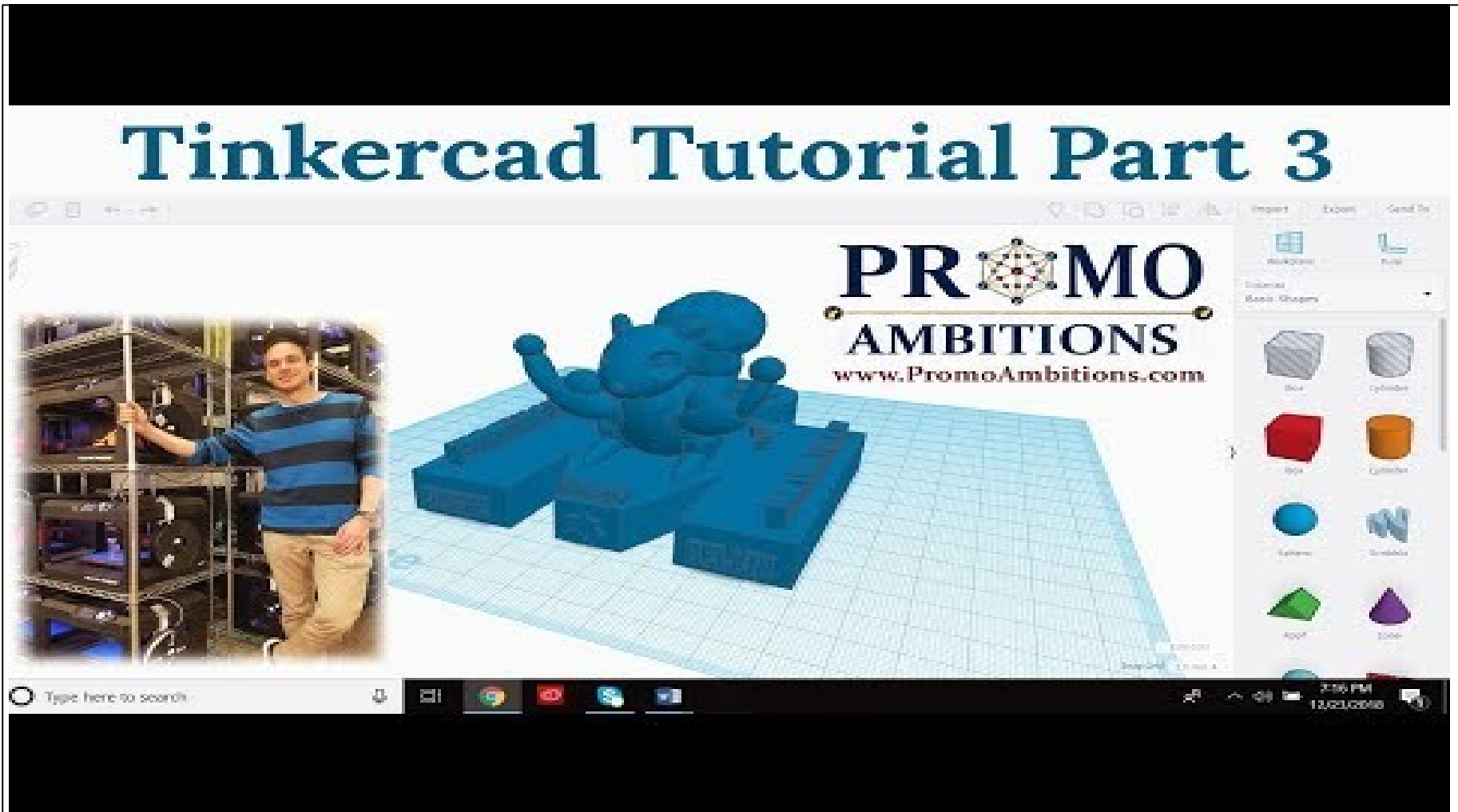
<https://www.youtube.com/watch?v=2JFxtUIOnEI>

Tinkercad Lesson 2 by Promo Ambitions



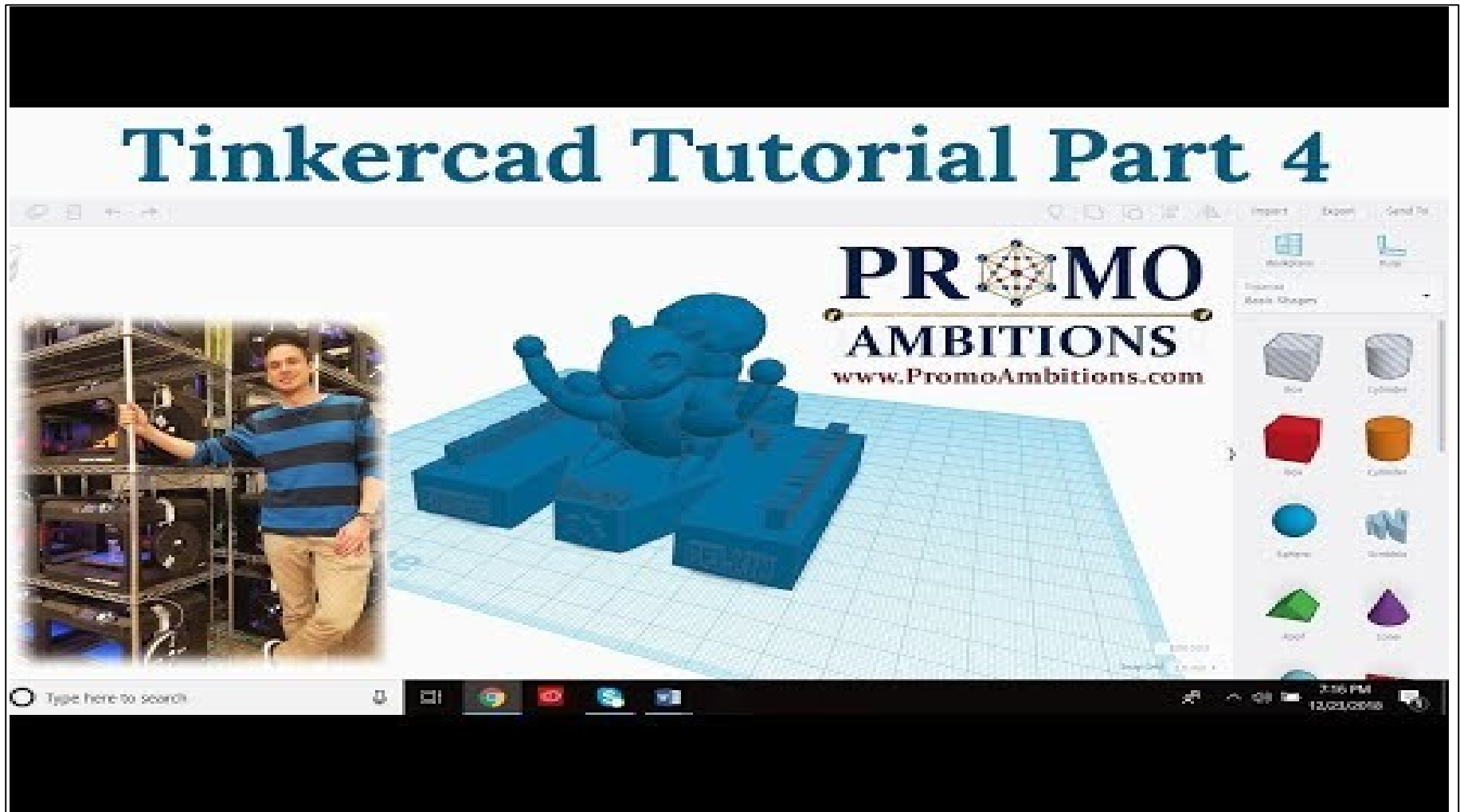
<https://www.youtube.com/watch?v=Xy6EuqocJKI>

Tinkercad Lesson 3 by Promo Ambitions



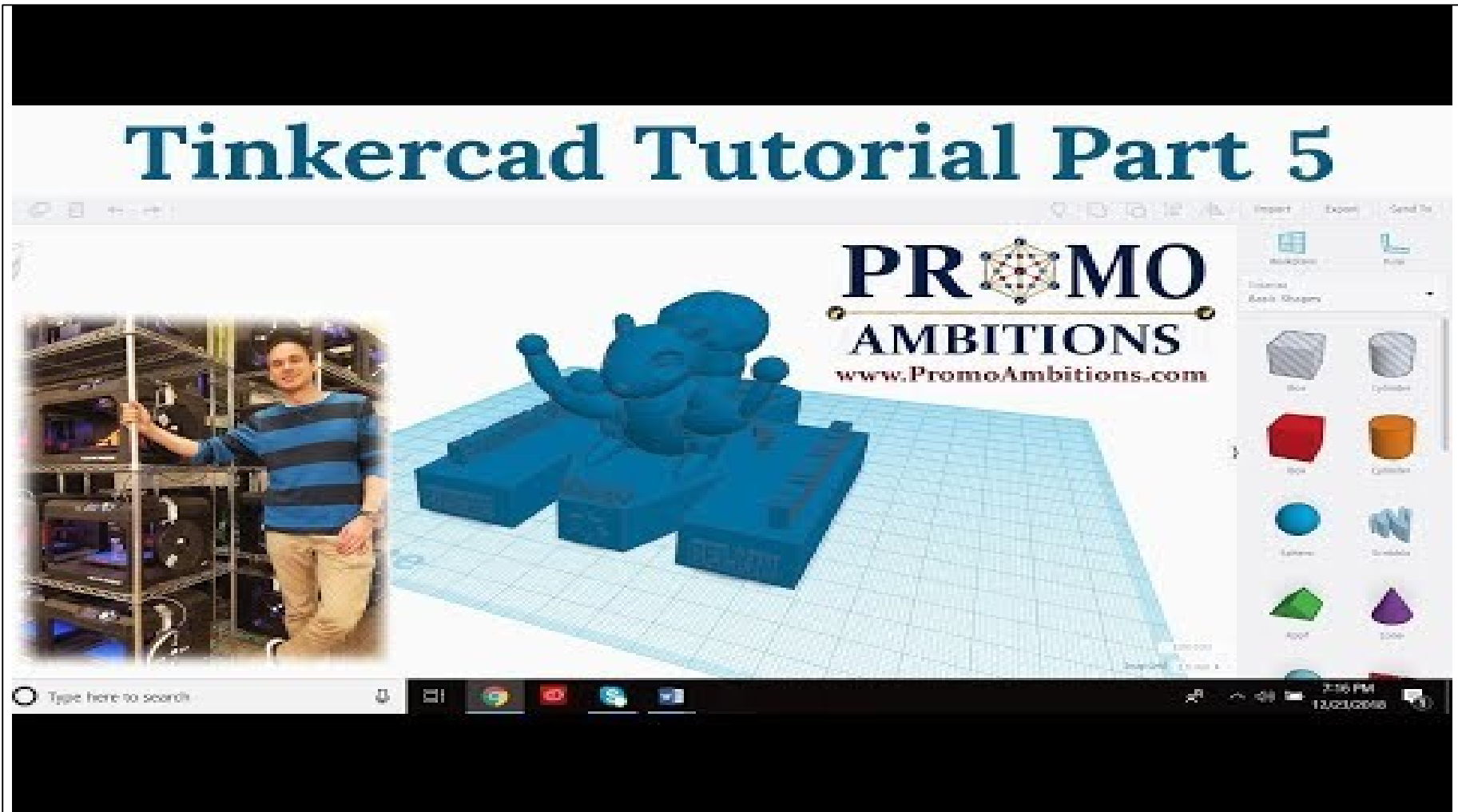
<https://www.youtube.com/watch?v=hbQww7pWGt4>

Tinkercad Lesson 4 by Promo Ambitions



<https://www.youtube.com/watch?v=aa2uboMStVQ>

Tinkercad Lesson 5 by Promo Ambitions



https://www.youtube.com/watch?v=J_M8LGsEIJs

Tinkercad Lesson 6 by Promo Ambitions



<https://www.youtube.com/watch?v=1sVJZE2oVHs>

End of Lecture 2