

Beck's Engineering Youtube Channel Rabbit-hole List

Here is a list of some youtube channels that I have previously found whilst sliding down different rabbit holes. For some of the entries I have linked specific noteworthy videos that I recommend, for others I have just linked the channel. For a select few I have both linked the channel and a few select videos; by this I mean that while I recommend the specified videos, I really think the whole channel is quite interesting.

They are arranged alphabetically and I have rated each one by how excited I feel thinking about the projects; three asterisks being 'a kid on christmas morning' and one being 'pretty jolly.' I have put the rating in front of each in front of each name respectively.

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***Ased Musa**

Designed some interesting low-backlash actuators.

<https://www.youtube.com/@aaedmusa/featured>

*****Applied Science**

This guy is WILD. He makes some very advanced imaging equipment and has plenty of one-off videos explaining niche topics. Here are two especially notable projects:

[SEM]

https://youtube.com/playlist?list=PLA9renIgK3NanGpSnphOobF8hRPZAychL&si=Yc2M_szbXUIEsU4s

[DIY CT scanner] <https://www.youtube.com/watch?v=hF3V-GHiJ78>

****Ben Eater**

Makes a wide range of computers from the ground up; going from breadboard to an 8-bit cpu. He also makes great practical explanatory videos, both about the computers and other electronic/circuit related topics.

<https://www.youtube.com/@BenEater>

***Ben Katz**

Made a fully custom espresso machine from the ground (hah) up. Also has some other mechatronics (and a mountain biking) videos.

[Espresso] <https://youtu.be/3tTyvmxyGaQ?si=7M5m8PvU8AssR7uz>

*****Breaking Tabs**

This guy is also crazy! He has plenty of machining videos and some chemistry/general science videos, but he also does Photolithography at home!

[DIY camera sensor] https://youtu.be/O7xH9ZSp_B4?si=sQEVQ4-uvyfqSV8G

[DIY semiconductors] https://youtu.be/XJ9w7DjI_Bc?si=2j3eqPtzIVpWi2cF

***Capturing Dust**

He is just trying to design and develop the most efficient (partially 3D-printed) dust collection system he can at home. It's neat to see how far he can push its development.

<https://www.youtube.com/@CapturingDust>

****Christopher Helmke**

A German engineer who documents the process of creating and developing automated industrial systems at home.

<https://www.youtube.com/@christopherhelmke/videos>

****Cinema Mechanics**

Showing the process of designing and building an industrial robotic arm. Has videos of designing the arm, CNC milling the aluminum plates, forming carbon fiber parts, and more!

https://www.youtube.com/@Cinema_Mechanics/videos

***Designs by Luke**

Makes projects at the intersection of fine-carpentry and engineering.

<https://www.youtube.com/@Designsbyluke/videos>

***Diffraction Limited**

Makes videos about lasers and optics but also created an extremely impressive open-source “micro-manipulator.”

[micro-manipulator] <https://youtu.be/MgObPdiuUTw?si=5nMCR6licbf9jON>

***Engineer Bo**

Creates projects mostly related to motors (stepper and BLDC) and motor drivers and has made a neat scroll dial project.

[Dial] <https://youtu.be/tzqJ1rJURgs?si=q7ODO0FK9PypSxf1>

[Motor testing] <https://youtu.be/ecmG-Qz5V3g?si=AyrUtTqrC-eoA-qy>

***Engineering Simplified**

Shows practically how to do the math to control a robotic system (inverse kinematics etc.).

[Inverse kine] <https://youtu.be/EzZDRwmk8Nw?si=S9e-QrBZcVxJjk8d>

***Every Favor of Robot**

Makes cool mechatronics prototypes.

[CNC Etch-a-sketch camera] <https://youtu.be/iQhhutAanu0?si=dtLiBL7IZmWHxZwq>

***Excessive Overkill**

General mechatronics videos and has a 1.5 ton industrial robot arm.

[Riding the robot arm] <https://youtu.be/4vT3N8uIJEM?si=DZi9i7UT9oyAA8GA>

*****Great Scott**

Has a VERY wide array of electronics videos.

<https://www.youtube.com/@greatscottlab>

****Grind Hard plumbing Co**

Very impressive vehicle(ish) fabrications.

[Buggy long travel suspension] <https://youtu.be/E-8tWyPnfGg?si=N7wmaJ5YCqrOEcoI>

[Hayabusa Timbersled] https://youtu.be/b5EyGA3WyYU?si=xZxrsr_RgXOjlng2

****Harrison Low**

Designing and building a juggling robot.

<https://www.youtube.com/@harrisonlow>

*****Huygen Optics**

Teaches theory for, and grinds optics at home. You just need to watch a few of them... NUTS!

<https://www.youtube.com/@HuygensOptics/videos>

[Monolithic telescope] https://youtu.be/A0bysBIj0FA?si=n0U_4I_50gwwZCvL

[Optic from glass stovetop] <https://www.youtube.com/watch?v=r6fRT0FHgcc&t=1820s>

*****Inheritance Machining**

Shows concepts of machining through really cool and beautiful projects.

[Ball polishing tool] <https://www.youtube.com/watch?v=r6fRT0FHgcc&t=1820s>

[Hand drafting] https://youtu.be/YtchhV7aV7Q?si=4N0_b1e2zumU7C7d

****James Bruton**

All sorts of mechatronics projects.

<https://www.youtube.com/@jamesbruton/videos>

[openDog] <https://youtu.be/9PugfVSbnAg?si=SSQLuESeDcynF-OV>

****Lafayette Systems**

Builds actively controlled rockets; straddles electrical, mechanical, and systems.

<https://www.youtube.com/@LafayetteSystems/videos>

[Guidance computer] <https://www.youtube.com/watch?v=Z5iS-dAGq7c>

***LiamTronix**

Cool CNC build and other miscellaneous content

[CNC] <https://www.youtube.com/watch?v=Aj9ZwcOWxaY&t=924s>

****Marius Hornberger**

A German Engineer who builds all sorts of things for his shop and house. He is definitely a German Engineer!

<https://www.youtube.com/@MariusHornberger/videos>

[CNC auto tool-changer] https://youtu.be/ZeOUdosoEBM?si=gvuDgo_v5YeqVAUZ

****Matlab**

Has an awesome youtube channel teaching all sorts of concepts. It's similar to 3Blue1Brown.

[PID control]

https://youtube.com/playlist?list=PLn8PRpmsu08pQBgjxYFXSsODEF3Jqmm-y&si=UffkwwW0W_CTFVnU

****Max Maker**

Makes a wide range of projects across disciplines.

[RC lawn mower] <https://www.youtube.com/watch?v=Qn5ZmVfUYho>

[Hydrofoil] <https://www.youtube.com/watch?v=QQn92hN57ig>

[Rainwater drainage]

<https://www.youtube.com/watch?v=RzSKsnQp0MI&pp=0gcJCfwJAYcqIYzv>

***Michael Rehtin**

Mostly home rocketry and RC projects

<https://www.youtube.com/@michaelrehtin/videos>

***Mitsuru Yamada**

Very impressive proto-board computers.

<https://www.youtube.com/@mitsuruyamada>

[PROM writer] <https://www.youtube.com/watch?v=CRle9utAmhY>

****New Yorkshire Workshop**

Highly skilled craftsman with a wide array of impressive woodworking and fabrication projects.

[\[Sawdust press\]](#)

[\[Plywood sink\]](#)

*****Not An Engineer**

Luticus. Makes wild engineering/machining projects.

<https://www.youtube.com/@NoEngineerHere/videos>

[Tripteron] <https://www.youtube.com/watch?v=io4S9amExNM>

***Pask Makes**

Wide array of shop projects; very impressive stained glass with a CNC waterjet.

[\[Stained glass lampshade\]](#)

***Paul Barton**

Professional classical pianist who plays piano for elephants.

<https://www.youtube.com/playlist?list=PLzSEchvesNHbIdXClhtq1JoBgOx8D6378>

*****Practical Engineering**

Presents engineering in the real world.

[Connecting solar to the Grid] <https://www.youtube.com/watch?v=7G4ipM2qjfw&t=988s>

[Texas power grid failure] <https://www.youtube.com/watch?v=08mwXICY4JM>

[Cooling tower shape]

<https://www.youtube.com/watch?v=tmbZVmXyOXM&t=648s&pp=0gcJCfwJAYcqIYzv>

***Projects in Flight**

At home photolithography and scanning electron microscope.

[SEM] <https://www.youtube.com/watch?v=Kqx9blbYDB0>

*****RC Test Flight**

Works with homemade RC vehicles and pushing their limits on autonomous waypoint missions.

[RC boat waypoint mission] <https://www.youtube.com/watch?v=8zetRlliUO4>

[RC underwater rover]

<https://www.youtube.com/watch?v=0QS0A1Je6ME&pp=0gcJCfwJAYcqIYzv>

***Save it for Parts**

Makes and talks about vintage computers and radio gear.

[3D printed antenna]

<https://www.youtube.com/watch?v=PFQ6UKulxSo&t=731s&pp=0gcJCfwJAYcqIYzv>

****Skyentific**

Mechatronics theory and robot builds.

[Brushless actuator] <https://www.youtube.com/watch?v=3wdcVNxLzJg>

*****Smarter Every Day**

Former NASA engineer making in-depth videos across fields of engineering, science, and manufacturing. There are far too many phenomenal videos to give specific recommendations.

<https://www.youtube.com/@smartereveryday/videos>

****Stephen Bennett (DIYson / openTaskLight)**

Developed a super cool open source task light project inspired by Dyson lamps.

<https://www.youtube.com/@StevenBennettMakes>

*****Stuff Made Here**

He's an Engineer who makes a wide array of very impressive projects at home.

[Handwriting robot] <https://www.youtube.com/watch?v=cQO2XTP7QDw&t=1102s>

[Pool cue robot] <https://www.youtube.com/watch?v=vsTTXYxydOE>

(Just watch them all...)

****Superfast Matt**

Engineer who is building a land-speed-racer and more. Also quite funny.

<https://www.youtube.com/@SuperfastMatt/videos>

***The Efficient Engineer**

Similar to 3Blue1Brown but for specific engineering concepts.

<https://www.youtube.com/@TheEfficientEngineer>

****Tom Stanton**

Aerospace engineer who makes a variety of mechatronics and general engineering projects.

[\[Paper airplane rail gun\]](#)

[\[E-bike\]](#)

***Travis Mitchell**

Created multi part series walking through the process of building a CO₂ laser cutter and metal 3D printer.

<https://www.youtube.com/@diyfiberlaser/videos>

****Uri Tuchman**

A machinist who makes really neat and beautiful mechanisms and parts. Very funny.

[\[Brass pigeon clock mechanism\]](#)

*****Wesley Kagan**

Built a 60s-style f1 car with a Porsche boxter then swapped it for a V12. He also developed his own 'freevalve' system that opens the valves with actuators instead of a camshaft.

https://www.youtube.com/channel/UCy-IytMjnUY6_bAxD7yuZ-w

****Will Cogley**

Created a very impressive 25 DOF robotic hand.

[\[Biomimetic hand\]](#)

***Zack Freedman**

Created the open source 'Gridfinity' system and makes other 3d printing content.

<https://www.youtube.com/@ZackFreedman/videos>