



Custom PC Build Recommender

Max Garber

Motivation

I built my PC in 2012 and need an upgrade

Faster PC for training NN and playing VR games

Too many options

General interest in new computer technology

Question

Can I design a model to help build a new computer?



Data

Data Scraped from PcPartPicker.com

- List of builds most recent build
 - Name, Price, Author
- Detailed information of each build
 - Meta data: Description, Rating, Date
 - Part List
 - Summary Specs
- Detailed information of parts
 - Scraped specs for each CPU
 - Extracted information from the part names for everything else
- Combined and Cleaned

PCPARTPICKER

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BUILD

Snow White

by **evrophi**

17 | 11

<https://pcpartpicker.com/builds/snowwhite>

Part List

View full price breakdown

- CPU: AMD Ryzen 3 3000 3.6 GHz 6-Core \$164.99
- CPU Cooler: Extreme Aquaplus 240 75.8 CFM Liquid \$164.29
- Motherboard: MSI B450 TOMAHAWK MAX ATX AM4 \$114.99
- Memory: AOC 24G2 23.8" 1920x1080 144 Hz

TOTAL: \$554.51

Details

- Date Published: June 10, 2020
- CPU Clock Rate: 3.6 GHz
- GPU Core Clock Rate: 1.605 GHz
- GPU Effective Memory Clock Rate: 14.4 GHz

Description

Through a bit of patience and bad decision making, I was able to piece together a build I've been wanting to do for quite some time.

I do want an m.2 nvme at some point, but I can survive on this as the only things recycled from my last build are my storage devices, which are between 8 and 6 years old.

I also bought a white sleeve for cable management because I don't like the eye sore and it's really difficult to hide cables with a wire/glass desk.

Let me know what you think!

Log in to rate comments or to post a comment.

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Samsung 970 Evo 500 GB M.2-2280 NVME SSD by Nvidia Build

Size: 500 NVME: True SSD: True

Price: \$1238.32+ | 6 | 4 | \$3066.51+ | 2 | 0 | \$4632.65+ | 4 | 7 | \$1211.69+ | 1 | 0

Zotac GeForce RTX 2060 6 GB GAMING

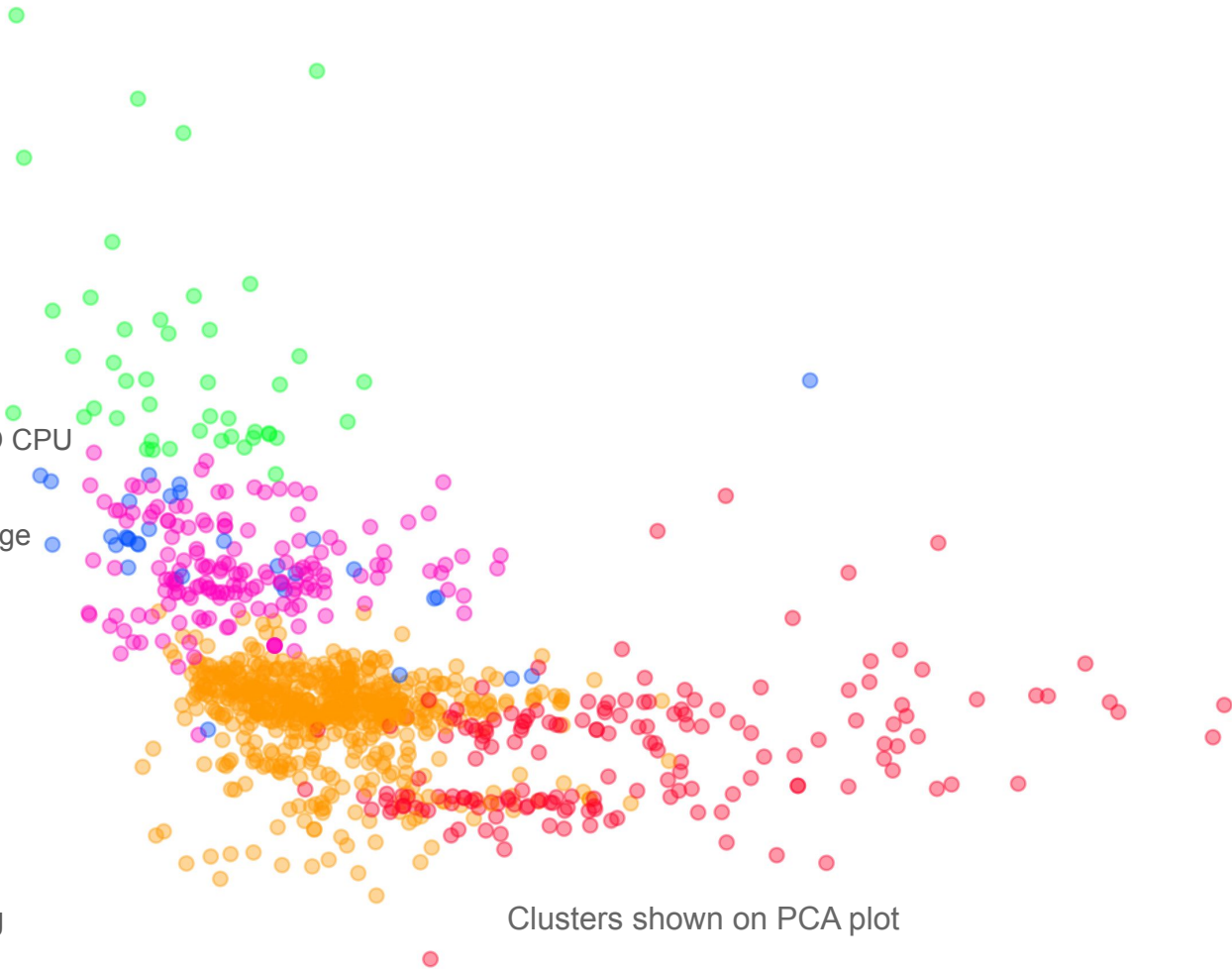
Video Card: NVIDIA Video Card Memory: 6 GB

First Build | \$800 Budget Gaming | Peripherals | Ghost S1 Cool n' Quiet

Clustering

Ward Hierarchical Clustering

- **General Purpose** \$1200
 - No GPU
- **Budget** \$800
 - Intel CPU favored over AMD CPU
- **Mid Range** \$1100
 - More AMD GPUs then average
- **High End** \$1800
 - Biggest category
- **Enthusiast Builds** \$3200
 - Best of everything
 - NVIDIA GPU
 - Lots of storage



* Price not used as feature for clustering

Clusters shown on PCA plot

Recommender

Content-based recommender using the technical specs of the builds

Recommendations based on euclidean distance of scaled features

Mid Range

Name	Build Price	CPU	GB	Video Card
Nephew's first build	\$1162.14	AMD Ryzen 5 3600 3.6 GHz 6-Core	1500	EVGA GeForce GTX 1660 SUPER 6 GB SC ULTRA GAMING
Mid tier Quarantine Machine	\$1239.90+	AMD Ryzen 5 3600 3.6 GHz 6-Core	2512	MSI GeForce RTX 2060 6 GB VENTUS XS OC
Mid tier Quarantine Machine - Updated	\$1339.89+	AMD Ryzen 5 3600 3.6 GHz 6-Core	2512	MSI GeForce RTX 2060 6 GB VENTUS XS OC
A31 R5RTX 3660 Backpack Build	\$1437.08	AMD Ryzen 5 3600 3.6 GHz 6-Core	3000	Gigabyte GeForce RTX 2060 6 GB MINI ITX OC

Enthusiast Builds

Name	Build Price	CPU	GB	Video Card
My first build(Red Matter)	\$4148.93+	AMD Ryzen 9 3900X 3.8 GHz 12-Core	2500	EVGA GeForce RTX 2080 Ti 11 GB FTW3 ULTRA GAMING
Wife: How much was that? Me: Oh not that much.	\$4069.18+	AMD Ryzen 9 3900X 3.8 GHz 12-Core	2500	Asus GeForce RTX 2080 Ti 11 GB ROG Strix Gamin...
Sasuke Themed All White (Mostly) High End Gam...	\$5031.20	AMD Ryzen 9 3900X 3.8 GHz 12-Core	2000	MSI GeForce RTX 2080 Ti 11 GB VENTUS OC
Corsair Whiteout	\$1672.93+	AMD Ryzen 9 3900X 3.8 GHz 12-Core	2500	Gigabyte GeForce RTX 2080 SUPER 8 GB GAMING OC

Flask App

<http://127.0.0.1:5000/>

PC Build Recommender

Data From PcPartPicker: [source data](#)

Builds

Min Price

Max Price

Plot Type

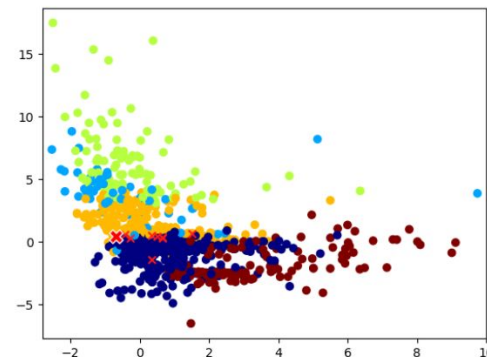
Plot Color

Dimensionality Reduction

Multi Select ☐

Quarantine Build

Reset



Build Info

name_build : Quarantine Build

price_build : \$1152.70+

description : I was planning on building this at the end of the year but 6 week isolation made me do this. This is my first pc build, and I thoroughly enjoyed it. Main reason for build is for gaming at 1440p, 144hz @120+ fps but currently only have a 1080p 60hz monitor, so I still have that to upgrade.

Recommendations

Quarantine Build

<https://pcpartpicker.com/b/jzYH99>

Benjamn's AMD Build

<https://pcpartpicker.com/b/VV6RsY>

Team Red in B/W

<https://pcpartpicker.com/b/bDx6Mp>

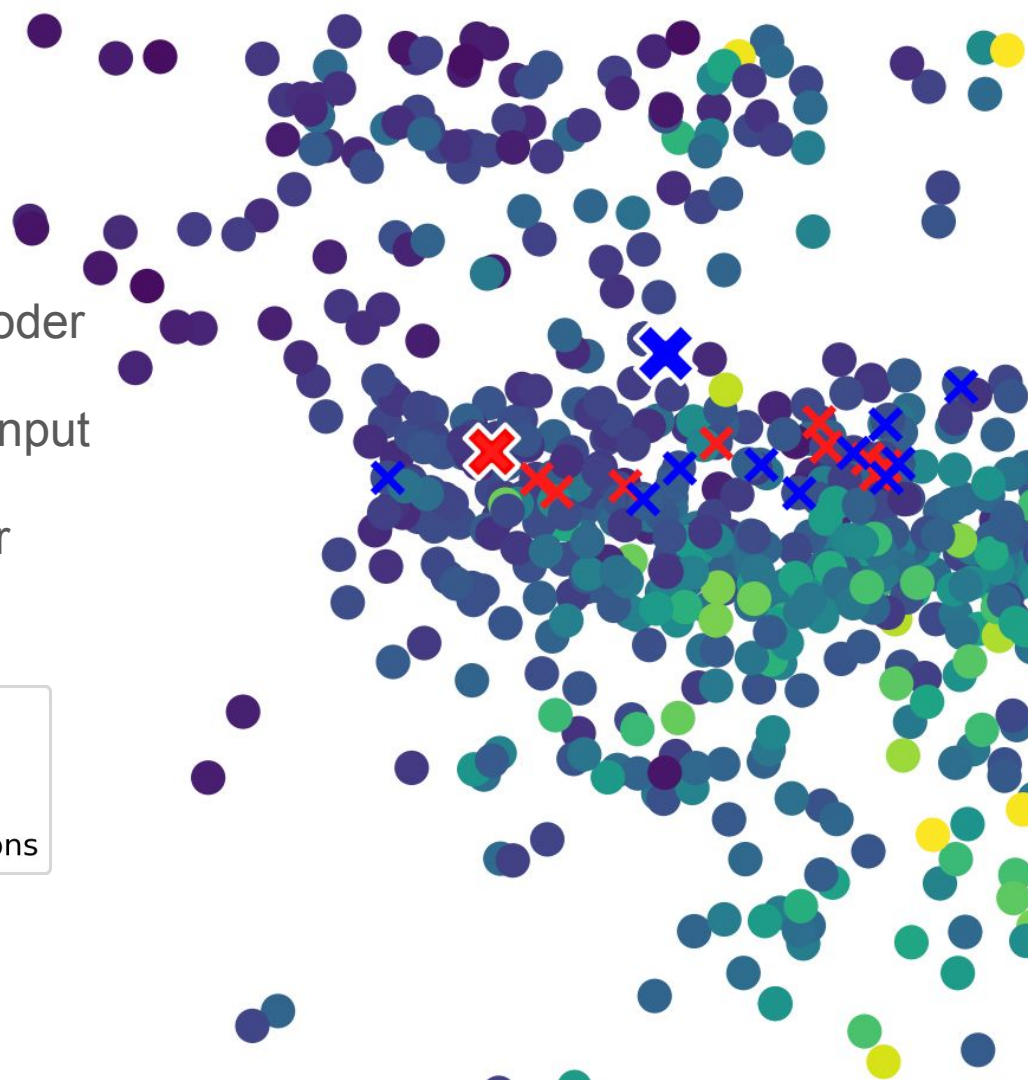
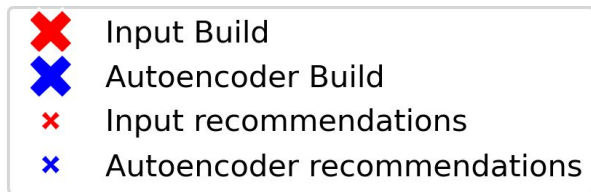
My first build <https://pcpartpicker.com/b/8NQqgs>

Autoencoder

Developed a Neural Network autoencoder

Generates unique build similar to the input

Build \rightarrow autoencoder \rightarrow recommender



Thanks



Max Garber

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