Digital filter analysis and design chat links below.

I have tried to include plots here which I think you may not be able to see using these links. In some cases, it needed a few attempts to produce the correct plot – in these cases I have tried to only include its final attempt here.

* General Filter Analysis: <https://chat.openai.com/share/bfd2101c-a359-4f96-a70a-7453bebaee01>
* General Filter Analysis: <https://chat.openai.com/share/43479c7c-40b8-461f-a5f4-49e12e9d106e>
* General Filter Analysis: <https://chat.openai.com/share/cae2578f-aa08-4ae9-8ef7-51ec401d7f01>
* T/X Func. – Diff. Eqn. : <https://chat.openai.com/share/bbc58108-2e9c-4154-bfec-80ccbc6b0f2e>
* Poles/Zeros – T/X Func. + Analysis: <https://chat.openai.com/share/8ace38ff-3946-4fd3-b0a0-8080d813a8d0>
  + Impulse Response Plot

A graph with green lines

Description automatically generated

* + Step Response Plot

A graph of a step response

Description automatically generated

* General Filter Analysis: <https://chat.openai.com/share/deb7e390-4d4b-411f-94df-98fd55b7416e>
  + Pole/Zero Plot:

A graph of a circle with red and blue dots

Description automatically generated

* + Impulse Response Plot:

A green line graph with white text

Description automatically generated

* + Step Response Plot:

A green line graph with white text

Description automatically generated

* + It seems to plot two different frequency responses for the same filter:

A comparison of a line graph

Description automatically generated

A graph of a function

Description automatically generated with medium confidence

* + 3D plot of frequency response:

A graph of a function

Description automatically generated

* 6th Order Filter Analysis: <https://chat.openai.com/share/d7e12972-5548-442b-8f05-208ebbf2cb08>
  + Pole/Zero Plot:

A graph of a function

Description automatically generated

* + *In this chat, in order to ensure the correctness of the answer returned by ChatGPT, I asked it to use multiple methods to confirm its workings – as a human would do*
  + Step Response Plot:

A graph with blue and green lines

Description automatically generated

* + Impulse Response Plot:

A graph with green dots and numbers

Description automatically generated

* + Frequency Response Plot:

A diagram of a graph

Description automatically generated

A diagram of a graph

Description automatically generated

A diagram of a graph

Description automatically generated

* + *I supplied ChatGPT with some random noise generated using Excel in a csv file and asked it to plot the input and output*.

A graph of a sound wave

Description automatically generated with medium confidence

* + Steady State Output Plot for a sum of sinusoids

A green line graph with white text

Description automatically generated

* Digital Filter Design: <https://chat.openai.com/share/24a34a93-4aa3-492b-b657-afb42d7b2aa0>
  + Plot of poles and zeros:

A graph with a circle in the middle

Description automatically generated

* + Impulse Response Plot:

A red line graph with numbers and a green line

Description automatically generated

* + Step Response Plot:

A graph with a red line

Description automatically generated

* + Frequency Response Plot:

A blue graph of frequency response

Description automatically generated

* Digital Filter Design: <https://chat.openai.com/share/f9100ea5-6502-4eab-bc41-a52f290870d8>
  + Step/Impulse Responses:

A graph of a function

Description automatically generated with medium confidence

* + Frequency Response:

A graph of frequency response

Description automatically generated

* + 100 Samples of Step/Impulse Responses:

A diagram of a graph

Description automatically generated with medium confidence

* + Impulse Response from Z-1(H(z))

A graph with green lines

Description automatically generated

* Explain how to design a second order digital LPF: <https://chat.openai.com/share/135cc2b7-9e77-469c-9ad4-3031f15c58a7>
* Chebyshev LPF Design: <https://chat.openai.com/share/6c490ed3-293f-4496-bc6e-c26e43b28a60>
  + Pole/Zero Plot:

A graph with red and blue points

Description automatically generated

* + Step/Impulse Response:

A graph of a step response

Description automatically generated

* Design a LPF and write Verilog: <https://chat.openai.com/share/cf649f38-cf95-45ed-860e-6836d4279b1e>
* Design a LPF and write Verilog: <https://chat.openai.com/share/3bd7ad84-c23f-4697-87d0-a4655515efb5>
  + Step/Impulse Response w/ Different Methods:

A graph of a graph of a graph

Description automatically generated with medium confidence

A graph of a graph of a graph

Description automatically generated with medium confidence

* + Frequency Response:

A graph showing a number of data

Description automatically generated with medium confidence

* + Pole/Zero Plot:

A graph of a circle with red and blue dots

Description automatically generated