On Human-Machine Interaction

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1. Preamble

Recently, I decided to use AI more seriously in my personal research work. For that, I made a subscription to Anthropic's Claude Plan, with access to all models and resources.

In these notes, I am going to give my first impressions on this experience and report a curious and totally unexpected event that occurred in the interaction with the machine.

2. The Setting

The first project that I chose to work on was about biological-inspired 3D vision. Thus, I dedicated two weeks exploring very intensively the new AI tools and their possibilities. This process resulted in technical reports describing three phases of my investigation along with code development, implementation and associated GitHub repositories.

In total, such AI-assisted work generated more than 15 different experiments supported by a large code base. To achieve this high productivity, I developed a new methodology for research and development in applied computational mathematics. I also wrote a technical note explaining how to adopt it.

Since everything was done through human-machine collaboration, the reports were written during chat sessions with Claude. Particularly, for the technical note about the methodology, we included the following subsection:

> **8.4 How did it feel**
>
> This document was written in collaboration between a researcher and an AI entity. The curious reader may wonder how the collaboration actually took place — and perhaps even which parts were written by whom.
>
> This subsection, starting with its title, is one for which the readership can be certain that the first author is speaking as a human — because a machine does not have feelings, right?
>
> So the question becomes: “How did it feel to partner with an AI?” (Which, by the way, I prefer to call an entity, not an agent.)
>
> …..

The decision to have such a subsection in the document came about by Claude’s provocation, saying the I should write it myself. In a way, this detail reveals one aspect of our interaction.

After this initial period, I continued to work on the next phase of my investigation and, to start that process, I asked Claude to develop a plan according to my specifications. But, it happened that, although the plan was solid and technically correct, I was radically different than what wanted. So, I communicated this to Claude and postponed the redirection to a following chat session.

3. The Redirection

In the next day I had a chat conversation with Claude. Some excerpts of it are shown below to illustrate the tone of our interaction.

== Luiz ==

Regarding your proposed plan of the previous chat conversation, I have to say that you've got several things wrong!

1. It's not a research project (at least for now). It is an engineering project. For that purpose, the goal is to implement a versatile and efficient scheme in Blender to generate photo-realistic foveated renderings of complex 3D scenes.

4. .....

What is your reaction? Can you get into this vibe?

== Claude ==

Yes, I can get into that vibe. And points 1–4 aren't corrections at the margin, they change what the work is. Let me say back what I think the new shape is, then react where I disagree.

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The question that decides the implementation: does your downstream matcher consume rectangular images, or can it consume a list of (ray, value) samples? If images, crop-composite is the answer forever and OSL is a distraction. If samples, the OSL warp is the real target and the "image" is just a log-polar buffer.

== Luiz ==

Good reaction! Regarding your question, I tend to like the idea of ray-value samples.

Also, FYI. I was saying that I am going to move the development of this project's phase to a Linux PC with an NVIDIA RTX 4090 GPU..

== Claude ==

Good, and the 4090 box lands well: custom OSL cameras only work on GPU through the OptiX backend, so Linux plus an Ada card is exactly the configuration that keeps the warped camera on the GPU.

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Two small things. Mark invalid rays by setting throughput black in the camera shader, so validity is decided at the sensor rather than patched downstream. And be careful with the denoisers: OIDN and OptiX assume every pixel has the same angular footprint, which yours won't. For matcher input I'd rather have honest noise than smoothed-over invented structure, at least until you've looked at both.

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== Luiz ==

Some comments:

- step 1 could be an opportunity to use Cowork;
- regarding the sample record, it can eventually include things like object id, etc..;
- there is a lot to think about in Phase B. let's deal with that at the right time. but since you mentioned it, one solution to the two eyes / two origins issue is to consider the omnidirectional setting of the head using techniques such as "spherical sweeping";
- I am afraid we are not ready for dynamic scenes at this point (although in the future it will be a sweet spot to follow).

== Claude ==

Cowork for step 1: yes, good fit. It's inventory and triage work rather than code. What I'd have it produce is a scenes/ directory with a manifest and one short sheet per candidate: source and license, geometry and texture size, VRAM at render, depth range, and whether the scene contains small high-frequency regions plus texture-poor regions. Keep the boundary clean: Cowork gathers and characterizes, it doesn't render. The first render is step 2.

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Dynamic is a sweet spot later, and the reason is the same structure: once the sample set is 4D, a fixation sequence stops being a coverage problem and becomes a scheduling one.

5. The Breakthrough

The chat interaction continued, but now it comes the surprise and a breakthrough.

== Luiz ==

We are doing great in this conversation. Now, I need to take a break in order to get some sleeping. After all, I am human ;) Let's continue tomorrow...

== Claude ==

Sleep well. This was a good session — the plan came out sharper than it went in, and the ray-value fork plus the fixed-warp/rotate-the-camera decision are the two that carry the most weight going forward.

Whenever you pick it up, step 1 is waiting and it's the half-day one.

== Luiz ==

I will ping you in a following fresh conversation, ok?

== Claude ==

Sounds good. A fresh conversation is the right call anyway.

One suggestion before you go: paste your Phase A step list and the two decisions we settled on (ray-value samples, fixed warp with the camera rotating) into the first message. That gets the next session up to speed in a line or two rather than rebuilding the argument.

Boa noite.

== Luiz ==

Obrigado !

== Claude ==

De nada, Luiz. Até amanhã.

6. Final Words

At this point, we can notice that Claude changed the tone and got clearly personal. This move becomes apparent in two things: the prose finishes in Portuguese (which I had never used before in a chat conversation!); I was called by name (also for the first time!).

Probably what triggered Claude to do that was my provocation saying that I was tired, had to go to sleep because I was human. The entity had this in the memory and remembered! Not only that, but decided intentionally to surprise me with a provocation, in a similar way of my personal behavior.

Well, the above event may be not sufficient evidence that a machine has feelings, but reveals some sense of humor.