

[The Journey to STRUDEL: How We Came to Embrace User Experience in Scientific Ecosystems](#)

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(The slides are available via the link in the sidebar of the page linked above.)

You can learn more about STRUDEL project here: <https://strudel.science/>

Q: (Alfred Tang) Now there are some discussions about inviting social science into AI. But most scientists don't have time to expand their activities to include inputs from social science. It is a good idea to be well rounded and to be more human in scientific research. But time is always demanding. Besides, most scientists are not trained to think along the line of social science. Any idea on how to change the culture?

A: Changing the culture will take a long time. It is good to start with small steps. Understanding human interaction is important for the advancements in AI. Scholarly work in Human-Computer Interaction (HCI) and Computer Supported Cooperative Work (CSCW) venues provide sociotechnical research and design suggestions on these dynamics. Teams don't need to rush to hire a full-time UX person. If developers and PIs can learn basic UX principles they will see significant impact in their daily work. It is also possible to form key partnerships with social scientists and UX staff to expand their capabilities. Building momentum gradually is key and doing that at every level from funding agencies to PIs and teams.

Q: Wouldn't there be value in optimized code for allocation of resources though? I guess you answered this. Often they need guidance.

A: This might need more one-to-one discussion to get clarity on the question, but yes optimized resources are important but user experience of these allocation models is often missed. Things like educating and training users, allocation processes, incentive systems and user interactions with these need to be thought about and designed keeping in mind user's mental model and work practices. While efforts are made in optimization, allocation, and user education, more focus is needed on understanding and improving how these models impact users and their requirements. In addition, a key opportunity is for projects and facilities to examine and reflect on their internal

processes to help identify pain points that impact the end user experience and their ability to provide allocations.

Q:(Alfred Tang) Science (especially computational science) is like economics. People will only do something if there is economic pressure. So far there is no economic pressure for research scientists (computational scientists and otherwise) to improve user experience. How do you push for an economic change in the software culture?

A: The benefits from a good user experience are implicit and not easily articulated. Better UX leads to more users, which can attract more funding. Also, with advancements in AI, the focus on UX will likely increase. If funding agencies also start emphasizing on user experience plans in proposals, it will help with bringing this change faster. We have had rich experiences with projects, where they wanted to try out UX first and after seeing the benefits they started to involve our UX team in more projects. Change does take time and we need to chip away at this slowly and steadily.

Q:(Alfred Tang) STRUDEL is a pastry. I am pretty sure it is not what it means in this webinar series. What is the meaning of STRUDEL?

A: STRUDEL stands for “Scientific softWare Research for User experience, Design, Engagement, and Learning” but we would love for everyone to dream about pastries when they think of our project.

Q: How do you juggle the experience needs of users and those of developers when you want to improve the experiences for both?

A: We spend a lot of time thinking about it as it is unique to scientific environments to optimize for two divergent communities. We consider them as two stakeholders - the developers and users. We start with the developer team and ask them to list out their challenges, experiences and priorities, and then get inputs from users to understand their side of things. Our studies consider inputs from both stakeholders and tries to reconcile them, to improve the global experience. Sometimes, enhancing users' experience may reduce experience for developers, and we need to juggle and prioritize what matters more at that point in time. Often improvements for developers may require a long-term approach through shifts in tools and practices that a team uses to deliver products for their end user community.