

# *Design Indirections*

Comment les designers *interviennent*  
*dans la fabrique* des algorithmes  
de curation et de recommandation ?

Laboratoire Approches contemporaines

de la **création** et de la **réflexion artistique** | ACCRA

Université de Strasbourg

**Nolwenn Maudet**

## Introduction

**Nolwenn Maudet**

maître de conférences en design  
à l'université de Strasbourg.

Je mène mes recherches  
entre IHM et design.

Travail réalisé en collaboration  
avec Jérémie Poiroux,  
Emeline Brulé, Karl Pineau  
& Aurélien Tabard

## Publications

Poiroux, J., Maudet, N., Pineau, K., Brulé, E., & Tabard, A.  
(2023). **Design Indirections: How designers find their ways in shaping algorithmic systems.** *Computer Supported Cooperative Work (CSCW)*.

Maudet, N. (2019). **L'angle mort de la personnalisation.** In *Proceedings of the 14th ACM Conference on Designing Interactive Systems (DIS'19)*.

# Un manque de recherche sur les pratiques des designers en prise avec l'IA

Dove et al. (2017) UX Design  
Innovation: Challenges for Working  
with Machine Learning as a Design  
Material. ACM CHI

Yang et al. (2018) Investigating How  
Experienced UX Designers Effectively  
Work with Machine Learning.  
ACM DIS

Un discours sur  
le ML comme « design  
material » mais  
aujourd'hui quelles  
sont les pratiques  
concrètes ?

Designers 'uniformly described  
difficulties in understanding what ML  
was and how it worked' and that  
'prototyping with ML is difficult'  
making it a challenging design  
material from which most stay  
afar' (Dove et al.,2017)

Comment les *designers*  
*interviennent* dans la *fabrique*  
des *algorithmes de curation*  
*et de recommandation* ?



## À propos du terme algorithme

# À propos du terme algorithme

To us, this term covers widely diverse technical arrangements, ranging from complex data-driven if-then structures used to show different content to different user profiles, to machine learning models.

*(Seaver, « Algorithms as culture », 2017)*



**19 designers.**  
3 in startups and small & medium  
companies, 13 in large companies  
(+250 employees), 2 in public  
administration, 1 in an NGO

# Critical Incident Technique

« Avez-vous, à un moment,  
rencontré des problèmes  
avec un des algorithmes  
du produit/service ? »

# Analyse

## Retranscription & Thematic Coding

We identified a common narrative: even for designers describing a close relationship with technical teams, they did not describe actively working on algorithmic code – but most did describe having an impact.

# *Résultats*

Qu'est ce que font les designers ?

Concrètement,  
à quoi ça ressemble  
pour les designers  
de *travailler*  
avec du *Machine*  
*Learning* ?

Du design intégré...

‘We brainstormed together different technical approaches to achieve [music mixes] based on people’s listening history [...]. It was mostly engineers, designers, product managers [...].’

(Nathan, 40 y.o., senior product designer, music streaming)

Qu'est ce que font les designers ?

Concrètement,  
à quoi ça ressemble  
pour les designers  
de *travailler*  
*avec du Machine*  
*Learning ?*

... au design déconnecté

For designers such as Adrien,  
working with algorithms meant  
that they were simply adding  
a currently empty 'dynamic box'  
for personalized content  
in their UI mock-ups.

(Adrien, 28 y.o., UX designer, local  
media group)

Où se trouvent les designers ?

3 ways in which designers  
were on *the production*  
*or reception end* of  
algorithmic systems creation



Où se trouvent les designers ?

1) Sometimes designers had to use an already defined algorithm that was pushed onto them.

Où se trouvent les designers ?

2) In some other cases, designers were able to define what an algorithm should do and submitted it to a dedicated team.

Où se trouvent les designers ?

3) Finally, in a few cases,  
designers worked side  
by side with engineers  
to define the algorithm.

Depending on their agency  
and position, we found that  
*designers chose to locate their  
design efforts at different levels  
of algorithmic systems.*

## Stratégies d'intervention

Designers intervene at 3 different levels  
of algorithmic systems:  
at a *technical level*, at an *interface*  
*or information architecture level*,  
or at an *organizational level*.

## Stratégies d'intervention

# 1. Techno or data-centric interventions

Techno & data-centric  
interventions

precisely  
controlling  
algorithmic  
parameters

‘I’m not part of writing [it]. What I understand is like what are the different inputs we’re using, and that’s what I need to control. Let’s say that we’re going to give recommendations and then the engineer says: “OK, we’re going to use age and location to do that.” Are we going to focus more on age or on location?’

(Dora, 26 y.o., senior product designer,  
music streaming)



Techno & data-centric  
interventions

# des interventions médiées par des échanges avec les ingénieurs

‘So that’s saying to the engineer: “well then let’s put an emphasis on that.” and so he says: “ok, I’ll train my algorithm to favor that.” [...] conversation is necessary.’

(Jean-Baptiste, 40 y.o., product designer, legal tech)

## 2. Interface or User-centric interventions

## Interface and information architecture work

# interface or information architecture work

‘Recommendation, it is also product placement strategy. What we call the “first screen view” in design, that’s the most important, what we see without scrolling, [...]. Recently we made a simple change. Before, when people stopped the app [...] and when they came back, they would be brought back to their favorites. I said: “bring me back everybody to the [home page]”’

(Clément, 38 y.o., VP of design, music streaming)

engaging in  
UI work to provide  
users with parameters  
so that they can  
control the algorithm  
themselves.

What I could do is saying to them: “here’s a few filters so you can decide”. [...] We could have a default 50/50 [women/men recommendation], like, here’s what we recommend [...]. The moment you get people the control to toggle it, it’s not something they can ignore.’

(Dora, 26 y.o., senior product designer, music streaming)

# getting the voice of the user heard

‘So with the upcoming piece of research that I’m doing with the Tech Lead from the router team, him and his team will be joining in on the research sessions so that they can also hear about these problems themselves firsthand and therefore be able to make more informed decisions with this knowledge [...]

(Helen, 32 y.o., UX researcher, food delivery)

# user-centricity as a rhetorical device

‘I can state my opinion, what is the best for the user. If that really disturbs the experience, I can veto. Sometimes we resist, for example recently, they [the marketing department] wanted that if a person was looking at iPhones 10, we should push them an iPhone 11 if it was currently on sale. If we think that it is too complex, we can say no [...]’

(Aude, 28 y.o., UX designer, tech. corp.)

# 3. Organizational and meta-interventions



Organizational  
and meta-interventions

# Educating designers and organizations about algorithms

Nathan, who was very interested in ML and is working in a team of engineers, has recently been involved in the creation of education material for designers about machine learning and set up an internal event about the topic.

# 4. Non interventions with algorithmic systems

# Resisting algorithmic push

‘You see, the thing with integrating this [ML algorithm], where is the need? [...] We are told that it’s for the clients. But I have never seen a client... [...] if they complain, it’s not because there is no AI. [...] Nobody, never ever, from all the users with whom I have talked told me “oh, we would love to have some AI in our products”. That’s why it’s driving me nuts.’

(Sara, 42 y.o., UX designer, tech. corp.)

Non interventions

with algorithmic systems

# Resisting algorithmic push

Justine criticized the significant gap between how much effort goes into developing an algorithm that identifies and recommends which companies are at risk of bankruptcy and how little human resources were involved to actually carry the prevention work.

# *Discussion*

*Broadening the scope of what  
« designing algorithmic systems »  
means : recognizing the impact  
of interface and interaction*

**The role of the interface and the interactions in recommendation is seldom studied or acknowledged, whereas they often are decisive in terms of visibility and performance**



**Content recommendation covers a multitude of design choices:** positioning choices in interface design, timing and frequency at which recommendations are made, how data is gathered through interface and interaction work, human curation, technical constraints such as available products or legal restrictions...

# Nurturing the *diversity* *of designers' interventions*

Even in positions where they do not have a full understanding of algorithms inner-workings or direct influence on their implementation, designers managed to have an impact, however indirect.

Being close from a technological point of view may mean stickiness to the technical framework, only allowing designers marginal changes like improving the usability of the algorithmic-based product, rather than defining its goals, or the way it is integrated in a product.

Merci !

## Nolwenn Maudet

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