

AI and Cloud Intersection Survey 2019: Seven Key Observations

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Introduction

In April of 2019, we surveyed 50 stakeholders in the broader AI field and asked them a series of questions about where they were in their AI journey, how their AI journey intersected with their Cloud journey. This survey was conducted both live at several AI conferences and also online at AI meetup groups. This report contains the summary and seven key observations of our survey.

A link to the survey questions is available here:

https://docs.google.com/forms/d/1tRgWe8LBMfCZFicDYsVz0hIR7Lv8oIXjMFDgImo4k/viewform?edit_requested=true

Observation 1: AI adoption and urgency is increasing

Figure 1 shows how the respondents described the most advanced AI project they had. While a reasonable number (almost 29%) replied that they were still in the learning stages and another (~7%) described themselves in the data gathering phase, a surprising fraction had several or more models in production (almost 50%). It is worth noting that those who had models in production frequently also had other projects in much earlier stages - not all of their projects were equally advanced. Another 13% reported being exclusively in the development stage (i.e. with experimental models).

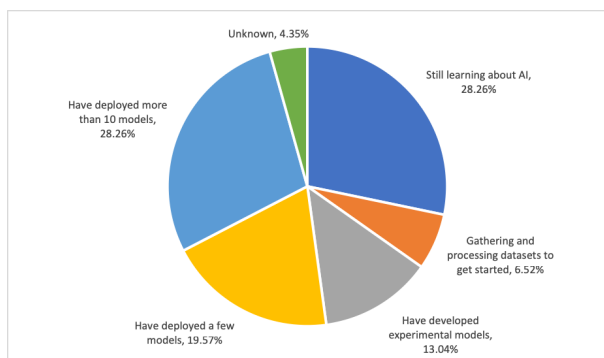


Figure 1: Where respondents are in AI journey

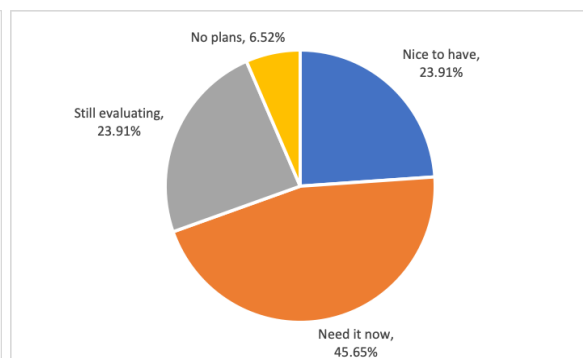


Figure 2: Urgency

Figure 2 shows the respondents' assessment of urgency. Around 46% believed AI was immediately needed in their use cases, while ~24% felt it was a nice-to-have addition. The majority of the remaining were still in evaluation mode, with a small fraction (~7%) not expecting any immediate investment. There is also a strong correlation between the responses in Figure 1 and Figure 2 - those further along in their AI journey reported a stronger sense of urgency.

Observation 2: Many stakeholders are involved in the process

Figure 3 shows the roles that responders saw themselves as performing in the context of an AI lifecycle. A range of roles were identified within the respondents (Application Engineer, Business Analyst, Business Owner, Data or ML Engineer, Data Scientist and Operations Engineer). While ~70% of respondents felt their primary role was one of these, almost 24% reported functioning in two roles simultaneously, while a small fraction (~6%) reported undertaking three or more of these functions.

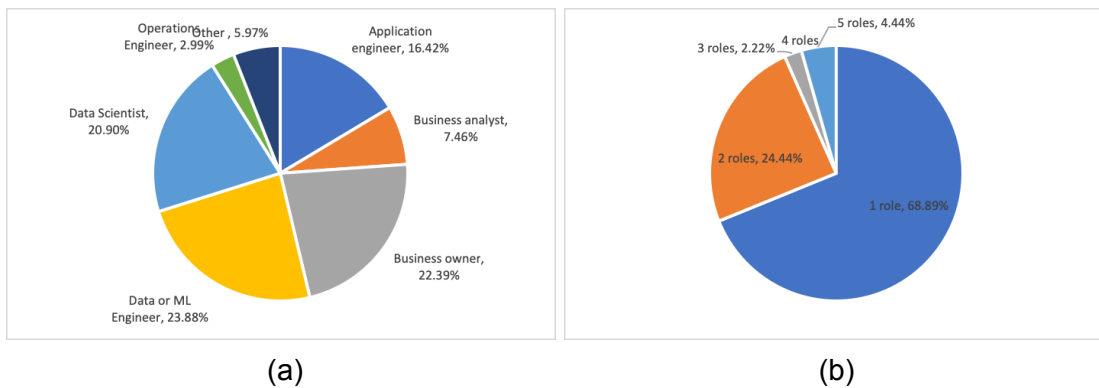


Figure 3: (a) Roles of respondents and (b) Number of roles per respondent

Figure 4 shows that most respondents see a need to collaborate with other stakeholders, with almost 47% of respondents identifying one other role needed to complete the AI lifecycle, and another ~28% identifying 2 or more additional roles.

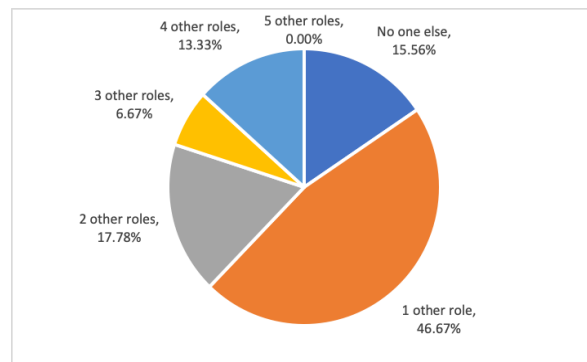


Figure 4: Roles and Collaborations

Observation 3: Blockers to AI

Figure 5 shows the top blockers identified by respondents - i.e. what is preventing them from being further along on their AI journey. While the lack of data and use case remain significant factors (totalling 57% of the reasons), a significant factor is the lack of expertise, which is broken down into lack of data science and implementation expertise (~17% and ~22% respectively). Lack of business priority was not as significant an issue - recording only ~3%.



Figure 5: Blockers to AI advancement

Observation 4: Many off the shelf algorithms in use

Figure 6 shows tooling used by those actively working on AI experimentation or AI deployment. While a non-trivial fraction (almost 18%) write their algorithms from scratch, a much larger fraction use some form of pre-built algorithm, either in the form of packages like SciKit learn (almost 26%), AutoML (almost 13%) or cloud AI services (around 12%). Of the remaining, another 20-21% tune and extend off-the-shelf algorithms to make their own custom versions.

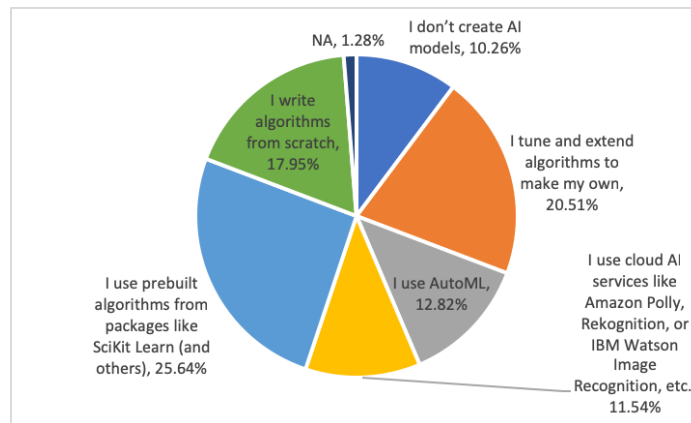


Figure 6: Use of tools, algorithms and services

Observation 5: Majority use cloud

Figure 7 shows the cloud usage among the respondents. While ~25% reported not using any cloud at all (strictly on premise private data centers), the vast majority (over 71%) use at least one form of cloud. About 38% use a single cloud vendor, while ~11% use a combination of a single cloud vendor and on-premise solutions and another 22% use more than one cloud. As figure 8 shows, the three major cloud vendors are well represented.

It is worth noting that usage of cloud in this context does not necessarily mean using cloud for AI. As we will see in later observations, while many use cloud, not as many are actively using cloud for AI.

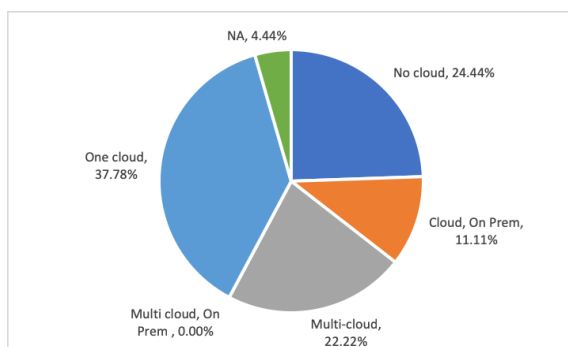


Figure 7: Use of Cloud

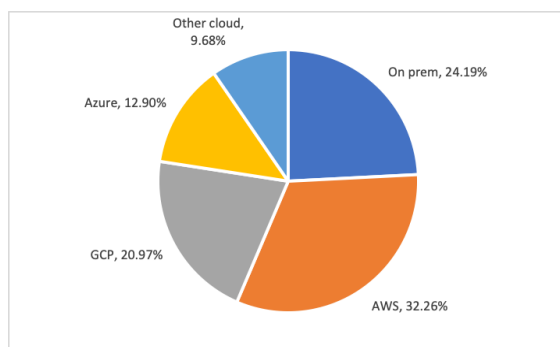


Figure 8: Cloud Vendor Representation

Observation 6: Reasons for cloud usage vary

While cloud usage was prevalent, the respondents stated varying reasons for their choice of cloud or clouds. As Figure 9 shows, about 36% chose their clouds for price, about 32% because their data was already stored there, and another ~26% chose to add new applications to a cloud because other applications were already running there. Another ~7% stated support as a reason for selecting a cloud vendor.

Figure 10 shows that a majority (~65%) had a single reason for picking a cloud while another 32-33% had 2 reasons and the remainder cited three or more of the above reasons.

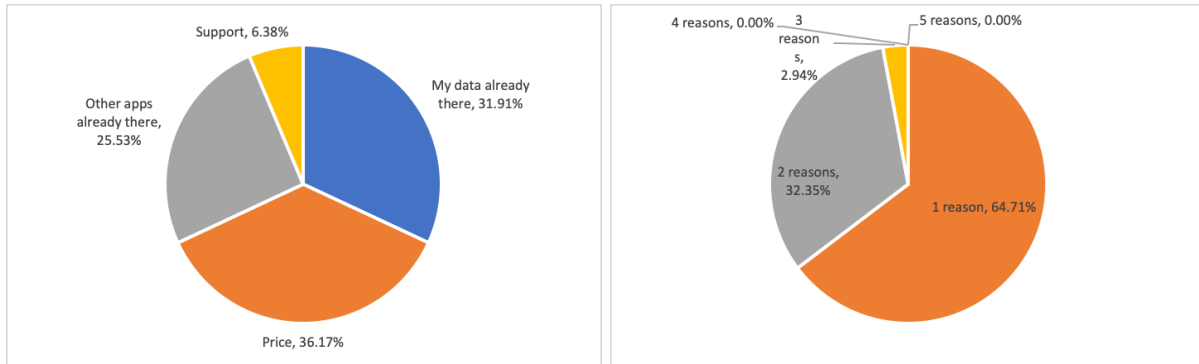


Figure 9: Reason for cloud choice, and Figure 10: Number of reasons reported

Observation 7: Cloud AI Usage is in its early stages

While the previous results showed that cloud usage is prominent among those doing AI, the use of actual AI services provided by these clouds is still in its early stages. This was also seen in Figure 6 where only ~12% reported using the end to end AI services provided by the cloud vendors. Figure 11 shows the survey respondents opinions about cloud AI services in general. About 39% found them easy to use, while ~30% were unsatisfied with price, ease of use or some other factor. Another ~32% reported either not knowing about or not having tried these services.

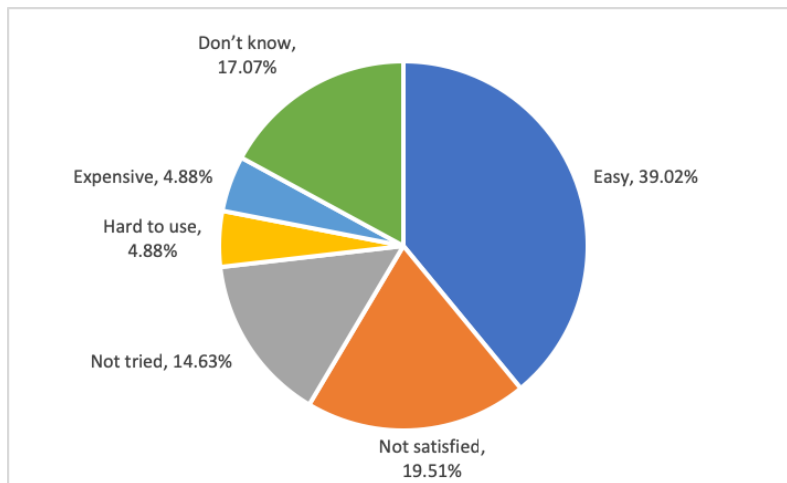


Figure 11: Respondents experience with Cloud based AI Services



Summary

This survey presents a point in time capture of the intersection of AI and Cloud. The survey responses provide insights into how AI is being developed and deployed, who is involved, and how they use and perceive both clouds and cloud based AI services.

If you have any questions about this survey, please contact info@pyxeda.ai