**Types of Prototypes**

There's a lot of different types of prototypes that product managers use to figure out what they're going to be building.

* You can use **paper prototypes** where you take the idea that you have and write it out on a piece of paper. Then you get iterate through getting feedback from customers/users and making adjustments and improvements.
* You can also do usability testing where you have some sort of **interactive prototype**. You can change the interactions based on expected or desired functionality and feedback.
* When building AI prototypes, it's helpful to do what's called a **real-data prototype**. This is basically a mini product where you build a minimally functioning version of the product that uses real data, maybe a real machine learning model or some sort of real user interaction.

**Real-data Prototype**

To create a real-data prototype, you can utilize a bunch of different open-source tools. By using real data, you can run pilots and tests for upset stakeholders and try out various solutions to see if it makes them happy and solves their problems. In addition, every increment that you make is a piece of real code written that can be used with the end product. This is what we did to build our video annotation tool, the machine learning assisted video object tracking tool.

Case Study

This is the cycle we used.

* Idea
* Build
* Apply
* Learn
* Iterate

The first several prototypes were not usable by our customers, but with each iteration we learned from the feedback and were able to make improvements, moving towards a viable solution. We needed to make it efficient to annotate video so that it was worthwhile for our customers, who annotate video for autonomous vehicles, health care, medical equipment, and a variety of other uses. With the small size of our team, we recognized that we were not in a position to build the best visual object detection algorithms for all these different industries.

Instead of building an AI solution, we decided to focus on helping human annotators do as little work as possible in adjusting boxes between frames in order to annotate videos. To do this we turned to open-source machine-learning models. There are a ton of potential products you can build, as well as components and different models that you can reuse and re-purpose for whatever you need. When creating a prototype or minimum viable product you want to do as little work as possible. With open-source resources, you might be able to do very minor customization to build something that helps your team.