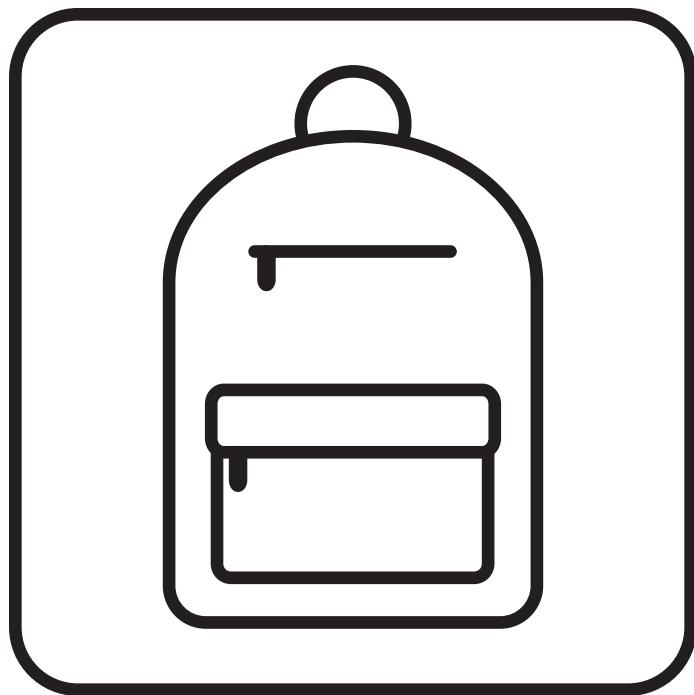


Enhancing the Backpack



A novel redesign for **Berkeley Innovation** by Ethan Chiou.

Things in my
backpack are

difficult to access.

I enjoy the convenience and load management that a two-strap backpack provides, but often find that my laptop and notebooks are not as easy to retrieve as if I owned, say, a messenger or tote bag.

And so here's my solution.

Research Phase

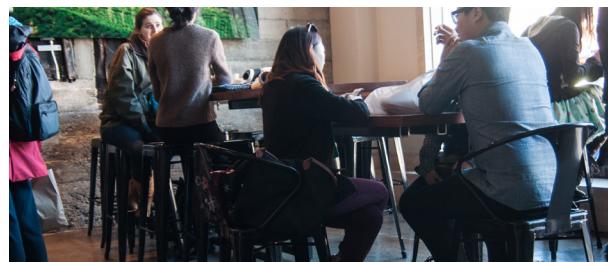
I sat at **Asha Tea House** and observed how people interfaced with their bags. I noticed the following:



Bag placed on the table, the ground, or the owner's lap **before anything could be pulled out.**



Needing to awkwardly adjust bag position, **even with a tote bag**, or needing to temporarily put it down to take things out.



Placing bags nearby (on ground, on neighboring seat, behind) for easy future access.

Existing Solutions

Whereas access to a bag after situating oneself is relatively simple, albeit space-in-efficient unless a bag hook is used, easy access to things while standing or before sitting is more of an issue.



Totes

Rather than use backpacks, people use totes or messenger bags to hold their things. They are spacious, and can be opened simply by shifting their position on the arm or turned around the body. However, they are cluttered and can still be difficult to use.



Side Pockets

Side pockets on backpacks, for holding water bottles, have since been commandeered to hold keys and phones, allowing people to reach back and grab them, but also causes awkward arm positions and blind groping for things. They can also be easily stolen from.



Single-Strap Backpack

A messenger bag-esque alternative to a simple double-strap backpack, the single-strap allows for convenience due to an easily detachable strap or rotateable body. They do not provide the load management of a double-strap, and are considered unfashionable.

Thoughts & Insights

How bags are arranged about a person (table, floor, chair) is already relatively efficient; the only gains that can be made, which are seen with a bag hook or clip, will be space conservant.

Totes allow for easier, albeit sometimes awkward, access to things.

It is the fact that bags must be opened from the top which makes them have to be taken off or put down in order to be looked and rifled through.

Possible Solutions

Slit to more easily open backmost compartment of backpack.

- Feasible and simplifying, but would still require backpack to be taken off.
- Alternative: rotateable backpack but that would require complex mechanisms/straps.

Built in bag hook, clip, or weight so the bag can be hung for easy usage while sitting

- Would save nearby space on table, chair, or floor, yet still be easy to reach.
- Space saved and efficiency gained negligible, isn't as much of a problem as quick access.

Separate "easy-access" compartments for commonly used things, such as laptops, notebooks, etc.

- Would save time in taking things out when quick access needed or when sitting down.
- Must be small, so only most vital things can fit, disallowing rifling through objects.

Inspiration & Mockups

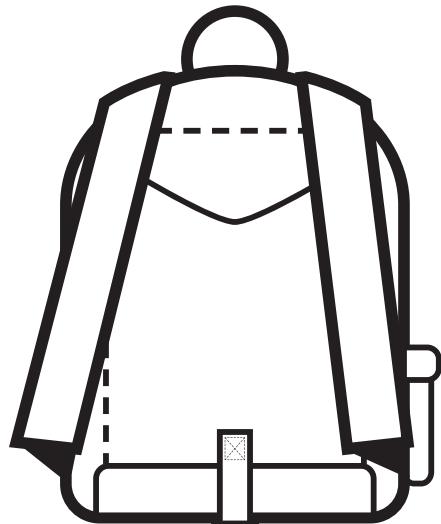
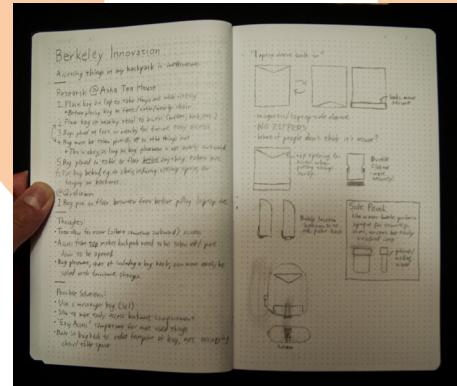


How else can backpacks be accessed?

This is the **Lowepro DSLR Video Fastpack**. Photographers need quick access to their gear, and this backpack allows for that with a special compartment. The bag can be hung on one shoulder as the user unzips the camera section and pulls the DSLR from the side.

Sketches

My sketchbook, containing various thoughts and ideas for the prototype (as well as my notes and preliminary ideas from Asha). Developed from built in laptop sleeve to multiple full-fledged easily accessible compartments.



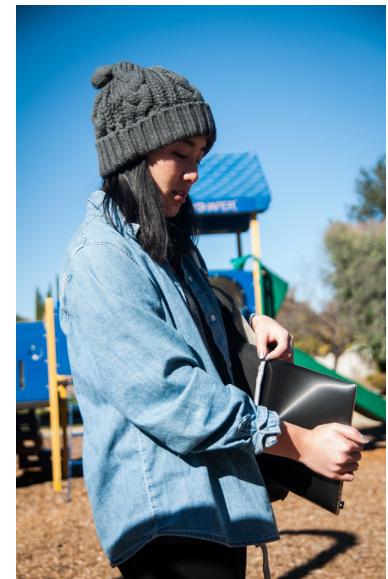
Illustrator mockup

Designed to fit laptops, but also notebooks, textbooks. Has both top flap to allow for easy storage, but also bottom opening for access when standing/before sitting. Double-safe closure, with magnetic flap as well as a buckle, prevents things from falling out/being stolen. Side compartment for quick access to phone, wallet, etc.

Prototyping & Testing



Yes, I **saftey pinned a laptop sleeve to a backpack.**

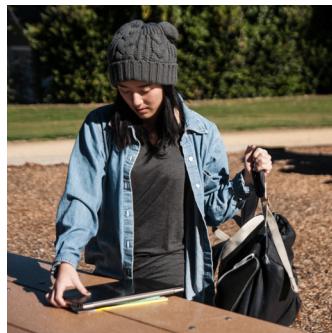


Taking laptop out while standing.

Letting the backpack hang on one shoulder while taking things out **wasn't as intuitive as I thought it would be.** It takes some getting used to, even if it is slightly more efficient.



Unfortunately, I was able to make neither a side compartment (although that would be easily tested with backpacks with bottle holders) nor a top flap. The laptop sleeve did hold both notebooks and folders well, though the neoprene would have probably caught on wire-bound notebooks.



The progression when sitting down is smoother than with a backpack. After the initial adjusting period, **taking the backpack off and taking the laptop/books out can be done in one smooth motion** rather than in two, as with before (putting the backpack down, then taking the laptop and books out).

All in all, the prototype worked as intended. It made accessing the things in the back compartment easier, and fit the various objects that it would be designed for. Several of the observed problems included comfort, which could be fixed with more ergonomic padding, side preference, which could affect usage of side compartments, and the “learning curve” associated with this new way of opening backpacks.

Thanks for reading!