**What I do?**

**Graphic & Web Design**

Good design means your idea gets across clearly and quickly. It also carries your brand on its back, selling your story and your vision.

**Concept Design**

A picture is worth a thousand words. I can create custom images of products or systems which help you communicate to your customers or fans.

**Augmented & Virtual Reality**

Augmented and Virtual reality create a chance for engagement which goes far beyond traditional mediums.

**CubeRover**

**Creative Direction Internship**

CubeRover is a startup building a new generation of lunar rovers. I was one of the first five people brought on to the team after Astrobotic and Carnegie Mellon decided to spin out the project as its own company. We are currently funded through a NASA SBIR Phase II grant and are actively pursuing private funding.

While working at CubeRover I developed the company branding from the ground up. I also designed and developed several iterations of the website, created video and animated content, and rendered concept artwork of several rovers.

Finally, I am leading the team designing the user interfaces which will enable control of the rover on the moon.

**Off-Beat**

**Service Design**

Off-Beat is the result of a semester long project for a class on service design. My four teammates and I were tasked with designing a service centered around music.

Over the semester we conducted interviews, speed dated concepts and explored different business models. This enabled us to create a robust service people actually wanted to use.

After several conceptual pivots we settled on a final service and dug into the details. We detailed designs for web pages, an app and even a employee to flush out our concept.

**Concept Design**

**3D Rendering & Animation**

A picture is worth a thousand words, that makes CGI an indispensable tool for selling an idea. I have created and rendered models for everything from cozy kitchens to advanced spacecraft.

Several of those designs I have brought to life through animation, creating compelling visuals that can tell a more complex story. Recently some animations I created of the CubeRover were featured on the Discovery Channel.

Some of my other work has gone on the front pages of NASA proposals and inside virtual reality worlds.

**Hyperloop**

**Design Team Lead**

The Hyperloop is a proposal for a futuristic mode of mass transit. It consists of large vacuum tubes stretched between cities and levitating pods. The pods can theoretical travel through the tube at up to 700mph.

The Carnegie Mellon Hyperloop Team is a student-led research group dedicated to developing technologies to enable a future hyperloop system. I worked as the Design Team Lead for two years.

During that time, we developed a virtual reality experience which then travelled around the country. I also created concept art and a variety of print and digital media.

**Off-Beat**

**Design a music related service that targeted an audience narrower than the mass market.**

Off-Beat was the culmination of a semester long Service Design project. Service design is a framework of design thinking which is unique in that it considers all parts of an organization as part of the design. For example, a service designer working for a restaurant chain would consider far more than normal customer experiences and touchpoints (waitstaff, menu’s, ect.). Their design would include the backstage processes, from how food is delivered to how the kitchen staff receives the orders in order to provide the best experience to all stakeholders.

This is the one photo of the whole team we took during the entire process, right after the final presentation. From front to back: Steven Ji, Emma Zelenko, me and Devika Khowala.

To kick off the process we did some brainstorming about what kind of service we were interested in designing. We explored some of the applications of music and what needs those stakeholders might have.

**Interviews**

For our next step we went out into the big scary world and interviewed as many of the stakeholders we had identified as possible. We identified about 15 different profiles of people who had some relationship with music either personal or professional. After summarizing all those interviews and discussing we settled on three key takeaways that would begin to help us define our service.

1. Local musicians are often looking for new people to play with, and the process of doing so can be rather frustrating.
2. Many musicians struggle to find a good place to practice that is both quiet and can tolerate a lot of noise.
3. There are lots of people interested in performing their music live, a surprising number even preferring to do it for free, without the pressure of a paid gig.

**The Local Musicians**

At this point we were fairly certain we knew who we wanted our primary stakeholders to be. Local musicians, they are the heart of the music scene and generally let us skirt the difficult legal issues around licensing music and focus on the user.

To get started designing a service that local musicians would love, we storyboarded a few of the ideas we had developed through our interviews.

**Podcast Reviews**

**Tinder for Musicians**

**AirBNB for practice space**

**Speed Dating**

For our next step we speed dated our initial concepts with a variety of people. We got some really positive feedback on several of our concepts. In particular the podcast seemed to strike a chord. Our users seemed really interested in learning through such an informal channel. The service focused on finding practice space also received lots of attention. This also validated our interview findings that this was currently a pain point for many musicians.

After speed dating we created another round of storyboards. For the sake of brevity, I’ll just add the one we ended up heading towards below. This round of storyboards fleshed out more of the details of the user journey so that we could start to get a handle on what it was we were designing.

Upon our review of these new storyboards we determined to move forward with a combination of this and our podcast-based service. For both sets of services we found ourselves gravitating to live events as the best way to build community, something we were beginning to see as key to any service for these stakeholders.

**Community is an essential part of music. Engaging with it makes for better matching.**

**Midterm Presentation**

It was at this point we were required to give a brief update presentation on our work, this provided a helpful time to reset our thinking and define our thoughts a little better. If you want to see the whole presentation you can see a copy here.

The most important part of our reflection was the mission statement of our service.

**Putting the service to paper**

Following our midterm presentation, we needed to go from the concept we had built. A service centered around helping people find bandmates through a community built by podcasts and events. To a real plan we could start to implement.

We took a step back and gathered feedback, both from our presentation and new interviews and found there were three key points around which we wanted to pivot our service.

**Community building is a more universal need than looking for bandmates.**

Seeking for bandmates might be limited to band-based musicians such as Rock, Jazz, etc. A broader need that all genres of musicians have is seeking a community in which they can draw inspirations from and fulfill their emotional needs.

**Musicians are interested in learning from different genres**

Furthermore, many musicians are very interested in meeting musicians from different genres to broaden their views on music.

**Advanced notice for events**

While receiving spontaneous music event updates are enticing, musicians would like to have at least a day in advance to prepare for an upcoming music event so that they can properly dress for attending it.

We also began to explore the more technical elements of the service, what our value flow looked like and what our revenue model could be.

**We had a problem. Once you found a bandmate. Why would you come back to Off-Beat?**

As we dug into our value flow and revenue models we realized that a service built on helping people find bandmates was likely to be unsustainable. You could create a tinder like app to do it but there was unlikely to be a community built that way and there was little to differentiate us from existing services.

We developed three key insights from this realization about how we could reposition our service.

1. Musicians are constantly on the lookout for other musicians they can play music with.
2. Skills are not enough, it is important for musicians that they find people with personalities compatible with theirs.
3. Developing a community is a great approach to help musicians find each other.

**Off-Beat became about building a community first and foremost.**

With our newfound clarity about the goal of Off-Beat we finally got down to details and started defining who our service was for. We developed personas and started out build out their stories.

Armed with these new personas we began to explore how their journey through our service might look in more detail.

We brainstormed events that might best help us build the kind of community we wanted to build. This was the first time we thought about what the structure of these events should be. How formal or informal did musicians actually want?

We also revisited our value flow which was becoming a real beast with all the added detail from this new pivot.

**Recap**

To recap, because a lot happened there. The service has pivoted and expanded. We now offer three primary services.

**Off-Beat sounds great but how would it actually work?**

**Prototyping**

In order to develop our service past the high level theory we had been working in we decided we needed to zoom in on a few touchpoints.

**Off-Beat App**

An app prototype which would be the hub for user interaction with the service. It would help users find relevant events and chat with other members of the community.

We started our design of the app with quick hand sketches. As we worked through these wireframes we found it helped inform the larger service, by forcing ourselves to determine what search functions would be necessary we ended up back at our user, gaining a better understanding of the kinds of events they would be interested in.

After our quick sketches we moved on to more formal wireframes. We wanted our app experience to be as simple as possible. At the same time, we found we needed a lot of information in our events and profiles. Finding creative ways to balance these needs was our primary focus at this point in the prototyping.

We also developed low fidelity digital prototypes to test some of the interactions we were designing.

**Jam Session**

The jam session was quickly becoming one of our favorite exclusive events. A larger group of musicians would meet up at an interesting location and be split into groups. These smaller groups would break off make friends and music.

We were pretty sure the Jam session would be a hit based on our speedating but we had some other ideas we wanted to explore as well. The first thing we did was conduct a survey of what events our users were most excited about.

Overall, we got some really positive feedback out of our survey. Overall users seemed more interested in events where they were developing their skills rather than being judged on them.

We decided to move forward with the prototype of the Jam Session since it was the best opportunity to explore the levels of structure users were interested in. In order to do that we developed three more storyboards of the Jam Session. These spanned a spectrum from highly structured, with assigned groups and rotations, to something more casual. We then speedated these with more users to gather feedback.

We also went and visited a local jam session to see how these events happened in the existing community.

We then developed a user journey map of the Jam session. This gave us a solid reference for what would happen at the event.

**The service was getting so complicated we nearly lost our unique value add.**

**Diagramming**

We realized a sizable portion of our service, the events hosted by users and our free tier of service, was simply duplicating work done by existing services without a real differentiation. We decided to pivot towards the premium tier of our service, with curated events, to make sure we could create the best value for our users.

We also developed the first draft of our service blueprint. Which outlined the front and backstage elements of this new simplified service.

**Cost Evaluation**

We did some basic analysis of how much it would cost to run the service we were considering and found we could push the price for a subscription down to about $20 a month. After talking with users, we found this was a cost that was acceptable to a sizable portion of our target users for the service we were providing.

**Insights from the pricing research**

*I am willing to pay more than $20 if the event takes place more than once a month. I might miss an event, so it would be nice to still go to another one in the month to get my subscription fee’s worth.*

**Finalizing the prototypes**

At this point we developed some branding to use for Off-Beat. We then incorporated this branding into our prototypes for the app, website and event host.

We also hosted and filmed a version of our Jam Session. This allowed us to see how people could interact in a more real-world environment than simply storyboards.

We also continued to refine the app prototype and integrated our branding.

This page was running over the length limit of Adobe XD in my prototype, so I decided it probably wouldn’t hurt to put the final presentation on another page. Just click below to check it out. Thanks for reading this far.