From Fusion 360, use the data panel to open the model in A360. Navigate to the actual 3D version of the file online. In the viewer, there is a button in the top right corner where you can share the file. In the Share window that pops up, click on the Embed tab. There are three different sizes to choose from and a text box with the code. Copy the code in the text box after selecting the size.   
Next, you need to open the web page that you want to paste this into. Most online systems (such as WordPress) give you an option to view the page as text. Simple past the code into the text version of the page. It may take a little to figure out where the code should go. But, once you switch back to the normal view of the page, the 3D version from A360 should load.

<https://knowledge.autodesk.com/support/fusion-360/learn-explore/caas/video/youtube/watch-v-xa595rm-uUI.html>

# Vision

I’m drawn to healthcare for not only the reason of helping the people most in need but also because I’m interested in the medical field. Everyone is different and has different needs. There are many disabilities which can result in problems you wouldn’t expect, for example how physical disabilities can limit everyday tasks. Design can help is by adapting everyday products to people with special needs, to make sure they are able to live as independently as possible.

The medical worlds is evolving and there are more and more ways to help people improve their living quality, but sometimes it seems to me that the medical world only sees the broken bodies that need to be fixed but not the human inside the bodies. This results in great working therapies and procedures but which are not always perceived well by patients. In my opinion industrial design can be the bridge between the medical world and the patients. For example when looking at rehabilitation programs. Doctors provide exercises to patients, to improve after a medical procedure or physical problem, but for patients it might be hard to do these exercises correctly independently or to find the motivation. Products can be designed to provide motivation, make rehabilitation more fun or provide tools to make the exercises easier to perform at home.

# Identity

I’m a very goal focused designer. In the case of my main interested healthcare it doesn’t seem possible to be completely user focused while there are many other standpoints, like the medical side and the other stakeholders like healthcare professionals. Although I want to be user focused and truly design for the user I understand that a product needs to be liable.

Goal focused also means that I have a core purpose of the design, other aspects are designed to support this core purpose but do not overshadow it. For example if my core purpose is to help elderly with arthritis therapy at home, I will focus on how to make the design motivating, easy to use and how to make sure the therapy is done as close as possible as it is medically advised. The look of the product will mostly be designed by how it can be easy understood and used, the aesthetics will never overshadow the purpose. Being goals focused also helps me to work strategic and stay on track of the initial focus, I will not easily be distracted from what I plan on doing.

Research is very important to me while I see the necessity of it to make a great liable design. I healthcare you can not only listen to the wishes of the user, you need to know some of the medical thoughts behind it. Also research and benchmarking helps to understand what is already known to avoid making mistakes that have already been made and to know what does work. Doing an extensive research project myself is something I have only done once, but this sparked interested. I might want to move on more toward a being a researcher for design but to understand this better I have to experience more what this would mean.

# Portfolio

## Arthritis glove

Arthritis is an illness which causes inflammation and pain in the joints. It can limit flexibility and make moving painful. A common therapy is hand exercises and wearing gloves, to keep the joint warm.   
  
We worked on implementing lights in already existing gloves to provide feedback and information about the exercises. During the exercises the lights show information about how the movements need to be done. Lights, representing joints, use colors to show if the certain joint needs to be bend or stretched. The lights would also provide notifications to show the user when it has been more than 24, 36 or 48 hours since the last exercises has been done, as a reminder and stimulation to do the exercises frequently.

## Bike helmet

In the Netherlands, the bike is a common transportation method. Young children learn to ride a bike and use it to go to school. Most children do not wear helmets. Helmets are a good way to protect the head, a vulnerable part, especially by children, while they are still developing.

User research showed that children don’t like wearing a helmet because they are not “cool”. For parents, the downside is that they often have to carry the helmet when the child is not wearing it. By making the helmet foldable, we hoped to make the helmet more superhero like and therefore cooler. The helmet can also be hidden easier and the flat helmet is also easier to store. This can be done in a back pocket in the jacket of the child.

For this project we looked at material choices to make a strong and save helmet. With calculations we tried to determine if the helmet could pass the safety standards that are applied on bike helmets.

## But research

This research project was done in collaboration with Adelante, a Dutch health care organization, we worked with the department focused on people who experience seating problems caused by sitting in a wheelchair.   
  
The research was done to look at how contouring of the wheelchair seating can help prevent pressure sores by looking at the distribution of pressure on the buttocks. Contouring wheelchair cushioning is already done to some extent and has proved to be useful. We have researched if a more extreme contour of the seating base can prove to be even more useful. Besides the pressure distribution, also comfort was tested on three levels of contoured seating. This tests together will give an insight in the overall effect of contoured seating on wheelchair users.

To do the tests three seating were made. These consisted of a hard base which was shaped and on top a soft foam. The contoured bases where made using a 3D model which was milled into wood. The models where shaped to resemble the anatomic shape of the buttocks and the upper legs.

The tests where done within subject, meaning that each person tests all three the seating’s, the independent variable. This results in correlated measurements, which enables us to compare the different conditions of the same person over the different bases. This subsequently eliminates individual differences over the different tests.

From the pressure tests we could conclude that increased contouring has a significant positive effect on both the SPI and the area of pressure. These results suggest that increased contouring can decrease high pressure points and therefore decrease the risk of getting pressure sores.

The results from the comfort test shows a significant difference between the contours, the more contoured the more comfortable. The questionnaires where however filled in by able-bodied participants and can therefor the results cannot be generalized. The results for people with paraplegia might be different.

## Autism game

For some children, making social contact is hard. The game MeeTo is inspired on PokemonGo. It is a stand-alone device which lets children collect zoo animals by locking fingerprints with new people. When a new fingerprint is scanned, a new animal will appear in the virtual zoo. This way, children are rewarded for making social contacts. This stimulates the social-emotional development and helps them further in life. While order is important for autistic children it is important to integrate the product into the normal life of the child, this can be done with simple actions like feeding the animals every day.

The design has a fun childish color and can be easily hold by the handle on the top. Rubber parts provide good grip to prevent dropping. The zoo theme was chosen to match the interest of both boys and girls.

## Blender

For this project research needed to be done to a regular blender. The conclusion was that multiple blenders where used, small one portion blenders and big multiple servings blenders. The biggest struggle was cleaning.

We had to come up with a new design to solve some struggles or explore opportunities we found. The new design was a modular blender. Different sized slots provides room to put different sized containers on the base. They can all connect to same rotation part that connects to the motor in the base. This provides the opportunity to use the same base for both a multiple serving container, a single serving container and a bowl. While there are multiple containers available the containers can also be used to store what was blended, when you want to blend something else you can just put a different container on. The double function of the containers and the option to take out the blades reduce cleaning and make cleaning easier.

Other opportunities we looked into where using light to give feedback about the content of the container, before blending it might be hard to estimate how much fruit you need to get a certain amount of cups. Using a weight sensor the amount of cups can be estimated by the device, which is shown to the user using lights.

The last function we looked into was how you control the speed of the blender. For the small blender the standard seemed to be pressing the top, the more force you press with the faster it blends. For bigger blenders the standard seemed to be a slider or a turning knob. By combining the two blenders it might be confusing to users if they cannot use their standard way anymore. Therefor the input should also be combined and both options should be supported.

## Campus game

Being physically active is important for your health, sitting for too long needs to be prevented. At a university many students and employees do sit for hours at the time. With a game we tried to encourage people to stand up, go outside and move for a short time.

The game consist of 8 plates on the ground which need to be pressed in a certain order, representing the code of you faculty. When the code is pressed you conquer the space. The longer you have the space the more points the faculty gets. Competition is used to provide stimulation.

To make the prototype we made our own button like pressure plates which where all connected to an inner plate which controlled everything. Data was also collected about the activities with the device. To get an insight in if it was understandable, did people manage to press correct codes, if it was used and when it was used. Observation from a distance also gave an insight in the interaction with the game.

## Coffee game

The Drink Bomb is a game for student houses that lets you decide who needs to get up and make drinks for the whole house. With the Drink Bomb you can indicate what you want to drink (coffee, tea or water) and see what others want. When the game starts lights appear on one of the boxes. By smashing the button the lights transfer to someone else. After a certain time the lights turn red and can’t be transferred anymore. The person with the red lights need to get drinks.

## Eating pace research

Literature has confirmed that a faster eating pace is linked to an increase of body weight and a higher chance of getting obesity. In order to slow down the eating pace, we examined whether light had an influence on eating pace. This research used our product, the PacePlate, to conduct whether blue light influences the eating behavior. Participants were asked to eat two same-sized portions, one with the light from underneath the plate and one without the light. While they were eating their bites where timed.

Results showed that people ate slower when eating with the blue light, there was more time between bites. Questionnaires were done to see if this effect was conscious or subconscious. Many thought they ate faster with the blue light, while measurements showed they actually ate slower. This contradict each other what is very interesting.

## Rituals

Rituals is a company which focuses on letting people enjoy the little things in life by experiencing the small rituals we experience everyday. The sell body and home products in the middle segment, almost all product have a distinct scent based on Asian traditions and ceremony’s.

Multiple analyses were done to find where a design could contribute to the shopping experience in the store. These analysis include; interviews with employees and customers, value framework, value proposition, SWOT (Strength, Weaknesses, Opportunities, and Treats), value flow model and a board of innovation.   
An important value of the company is personal contact in the store and providing an enjoyable shopping experience. This can not always be given when there are too much customers. We came up with Lit to solve this problem. Lit is a sphere which guides the customer to products which suit them most. In the beginning some questions about preferences will be asked, similar to question that an employee would ask. A sphere will light up in the color of the product line where the customer should go. When placing the sphere in the docking station at the given product line, light underneath the suited products will light up.

## Wrist brace

This project was about using a 3D scan of the human body to make a perfect fitting accessory. I choose to make a wrist brace. Looking online showed that using 3D printing braces was already done in the small scale, with potential to go bigger. This is while there are many advantages of 3D printed braces or casts. They can be made using 3D scans and are therefore individual and well fitting. 3D printed casts can also have a more open structure than what is seen with plaster casts, giving room for scratching and cleaning. For my design I chose to use a Voronoi pattern. The brace is made out of two sides to make it easy to put on without the need of bending or twisting the wrist. One side is closed by elastics, this side also works as a hinges when opening the brace. The other side is closed by sliders.

## Vr

Virtual reality is evolving and gets more popular. Therefor we took a look at how VR could potentially take over social media, by designing a concept for a social media platform in a VR environment. Looking at current platform we made some services that needed to be supported. Like making posts, sharing photos and chatting. We also took a look in what VR could offer. Like 360 degrees images and video that give you the opportunity to emerge more, and using sound and visuals to give a more lifelike experience to chatting.

In the final design we made a platform based on the inside and outside of a house, the outside is the inactive environment where you can make posts and see posts of others. These posts consist of the avatars of the other users holding bubbles with their post. Just simply peeking in lets you see the picture of video in a 360 degrees view. Inside you enter the active environment where you are able to see others who also entered the house and you are able to chat with them. If you’re in the living room of the house this conversation is open and everybody is welcome to join, when going in a separate room you can have a private conversation.

## Visualisations

In the study many visualizations had to be made, courses like Exploratory Sketching and Digital Design Methods (at Georgia Tech) helped to improve this skill. I’m able to made basic exploratory sketches that can convey both the visuals of the product as a story of its functions and use. In combination with 3D modeling I’m able to make renderings and animations of products.

## 3d modeling

## Modelmaking

Practice during projects and courses at Georgia made me able to improve my model making skills. Quick prototypes where made by adapting existing products or using basic materials like paper, cardboard and wood. Production methods like 3D printing and laser cutting helped to make more high end looking prototypes. At Georgia Tech I was able to work with new production methods like molding and vacuum forming.

A course about material properties and high scale production methods helped to get a better idea in how to design methods for a larger scale. Here we discussed how small changes in shape can cause big differences in the possible production methods and needed production steps. By using proper draft and a form that can be create using only 2 molds costs can be reduced. Also looked ahead at the assembly process can save production costs. While costs are always of great importance for a company it is important to look ahead and not risks having to make changes to your design. Looking ahead also includes how to deal with the electronics inside, this required to look at space allocation, what needs to be placed where and how big is it. This also requires to deal with heat production and the user. A product should not get to hot and the user should not be able to either be hurt by the electronics or be able to come in contact with

## Electronics

I’m able to make working prototypes using electronics in combination with Arduino and Processing. Sensors I have worked with include, accelerometers, ……., forse sensitive resistors and load cells.

## Apps

Working with Android Studio I’m able to program apps. Functionalities I’m able to add are logging data, basic data analysis, Bluetooth connection to Arduino devices and providing output through visual, auditory or tactile channels.

## Research

As a student research was done in a research project in the second year. After successfully finishing the project we were able to work on the possibility of publishing the paper. This gave great insight in how to write an actual scientific paper, basic research methods and how to analyze data through SPSS.

Within subject analysis, F tests – ANOVA, paper research, T test

Semester 1.1

Programming through creative programming

Design process through from idea to design, first insight in vision of healthcare

Physics and calculus

Model making through design for here and now, laser cutting

Semester 1.2

Data through modeling

Electronics through creative electronics

User and society through user centered design methods and use

Design process through project, healthcare, group leader, organizer and structured

Identity (I like structure when I work – PDP year 1)

Semester 2.1

Basic research principles through the course design research

Project, materials, standards, 3d modeling, production methods

Interdisciplinary team

Human factors through use learning line

Semester 2.2

Electronics and programming through use learning line, interdisciplinary team

Research, working with a client

Business understanding through different methods of business analysis, design for multiple stakeholders

Aesthetics of interaction, didn’t match my vision, structured efficient

Semester 3.1

3 modeling, improve in solidworks and learn fusion, rendering, animation, parametric

Model making

Human factors, physiology (working of eyes, ears, ergonomics) and cognitive skills

Production methods, understanding different production methods and understanding how this influences the design and the costs

Business and entrepreneurship, patents and standards, liability

Personal development. Going abroad helped me to develop as a person. Going out my comfort zone gave me more confidence in my capabilities to adapt and handle new situations. The arrangements that needed to be done also helped me to develop my organization skills. Being abroad and looking to Industrial from a different perspective also made me think about who I want to be as a designer. I did like doing research for design, the early stage of the design process, but I had never really worked on the later stages of the process, involving thinking about production methods, space allocation, materials and assembly methods. Seeing this part of Industrial Design made doubt what kind of designer I wanted to be. My vision about industrial design didn’t change much and it was only confirmed that I want to stay in the healthcare field.

Semester 3.2

Research skills were improved through adapting the paper made in 2.2 to make it ready to send it to a paper. This gave a better understanding in how to write sufficient and clearly, what was necessary to do in research and what was necessary to write doing.

App making and programming

Sketching

Doing my FBP my goal was to work with electronics and programming to develop my skill in technology. I believe I did reach this goal. Although there where struggles with both hardware and software I was able to make a working prototype in the end, with electronics, including a sensor and Bluetooth connection to send data to an app, which was used to turn the received data into proper feedback. During this project I also came across the Self Determination Theory. These theory sparked my interested and matched very well with my vision as a designer. I want to form a bridge between the professional healthcare and its patients. In the Self Determination Theory the importance of autonomy and competency and described well. People need to me able to have influence over something. This is what I want to achieve in healthcare, to make patients involved in their own healthcare plan or rehabilitation program. Having them involved can help them to take a more active role in their own healthcare, making them happier and making the therapy more efficient.

In this semester I also started to work with apps, a goal I had set to do in the first year PDP. Our concept for Design Innovation Methods involved an app, the fall alarm, an app was made in the course Creative Apps and my FBP involved an app. This did change my identity as a designer. I always thought that I wanted to stay away from this medium and that I wanted to make tangible products. A reason for this apps seemed to become over used, instead of pressing a real life button it was replaced by an app. But using app gave me a new appreciation for them, they can be great tools. Like for the fall alarm, probably no one would wear a sensor that tracked them and would send them a message if the elderly in their contact list had fallen, especially people not very close to the elderly. Downloading an app is less an afford and will easier be done. In my FBP the app would provide a possibility for patients to manage their own rehabilitation, do exercises and get insights. A screen would be necessary to convey the needed information. An app provides an separate screen that can easily be viewed. People often have it with them, they understand how it is used and there are no extra costs for the screen.

Throughout the 3 years I also have been an scouting leader at my scouting, here I worked with children in the age range of 4 to 7 and 10 to 15. This required organizing skills and working together with people from different backgrounds and educational levels.

I don't like designing apps while these lack the experience PDP year 2

PDP year 2 goal was to make 3D models on the computer, reached this goal

Learn how to sketch by self-reaching, while that didn’t work I did a course, goal still reached

Learn more about user testing and data, done in research project

Learn more about programming, electronics and sensors, this was my goal in some projects but it didn’t work out, had that opportunity in the FBP where I think I improved a lot

Final goal was improving electronics, programming and data. Done in FBP