

"Spider Dress" meets "SPID3R TOP"

A short story about fashion, artificial intelligence and LEGO wearables

By Mike Brandl

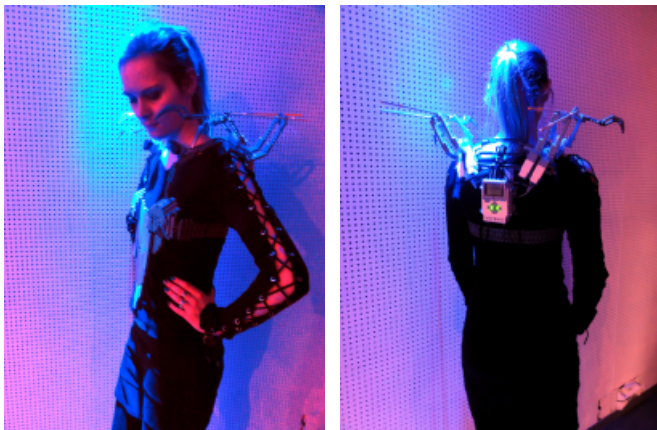


I like to build robots ... LEGO® Mindstorms robots ... and not only the usual kind of robot, those with four wheels and nothing more, I like to build the unusual!

In the past I built anything from egg plotters to a humanoid sumo bots, tried to send my bot to the ISS space station or deep under water, shot targets at a laser shooting gallery or mixed drinks with a cocktail robot ... but I never built a dress out of LEGO!

impressive body of tech-enhanced designs bringing together fashion and technology in an unusual way. She creates technological couture; with systems around the body that tend towards artificial intelligence; projected as 'host' systems on the human body, her designs move, breath, and react to the environment around them."

One of the best known projects of Anouk is her Spider Dress! I have always been a fan of that dress ... so why not build something like that with LEGO bricks?



A dress? Out of LEGO? Why that, you will ask! It's all Anouk Wipprecht's fault! And again, you will ask, Who is Anouk Wipprecht? Let me tell you about her, with her own words:

"What does fashion lack? "Microcontrollers" according to Dutch based fashiontech designer and innovator Anouk Wipprecht. As she is working in the emerging field of "fashion-tech"; a rare combination of fashion design combined with engineering, science and interaction/user experience design, she created an



The original Spider Dress is a 3D printed "mechatronic dress with an Intel Edison chip that uses biosignals and learned threat detection to defend the wearer's personal space".

In other words, when the wearer of the dress feels stressed or someone comes too near, the attached spider legs will attack!

So ... I started this project asking Isabella, a young member of my LUG (LGOe, LEGO® Gemeinschaft Österreichs) if she was willing to wear that dress in public at our annual spring exhibition in Vienna, Austria ... and she was interested and thrilled ... thanks again, Isabella!

The next step was to build the top of the dress out of LEGO Technic beams ... boy, that was hard!

You have to know about me, I'm a hard core technician, give me any technical goal and I will build your dream machine ... but organic shapes, with LEGO bricks ... me? Never ever!

So it took some time to realize, that this is impossible for me to build out of thin air. Help arrived in the shape of a dress form, donated by my daughter Teresa.

Now it was a bit easier modeling those gentle hills with those edged beams.

As a distraction during the assembling of the dress I quickly built the mechanical part ... an EV3 brain is attached to the back of the dress, together with four small EV3 motors and four worm gear boxes. The output axles of these gears boxes are connected to four spider legs. Each leg consists of leg tips from the old NXT kit, Technic beams and one 32 long axle, which guarantees a smooth movement of the leg.

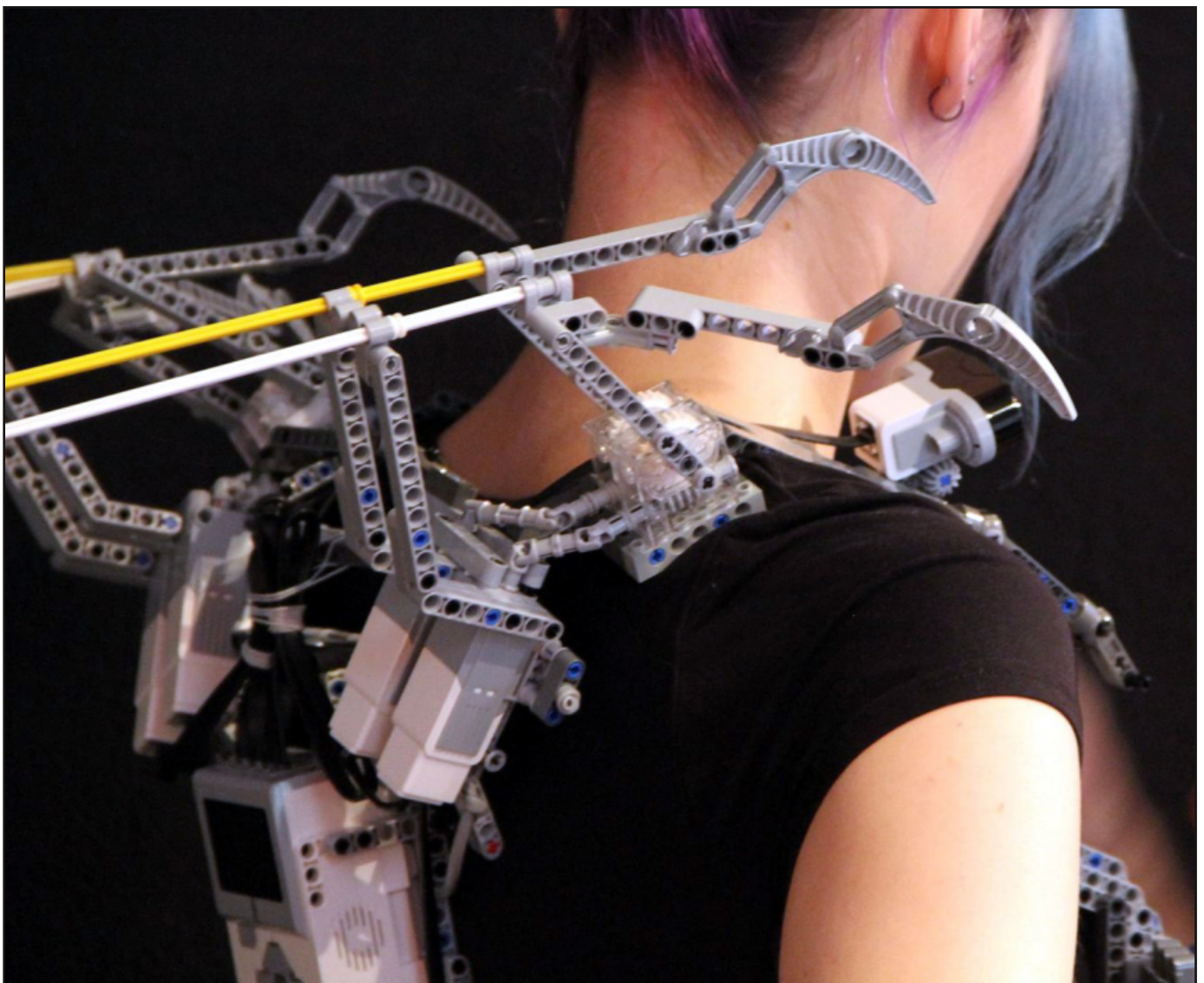
On the front two infrared distance sensors are attached, those react to the "intruders".

The program (EV3-G) is simple!

- If no one is nearer than 100 cm then nothing happens ... easy!

- If someone enters the space in front of the dress/the wearer from 100 cm to 20 cm then the legs on the shoulder starts moving ... gentle movements ... just be careful!

- But if someone comes closer than 20 cm, the spider legs attack ... without warning!



On the starting day of our exhibition Isabella and me met for the first dress rehearsal ... and it was a tight fit, Isabella and the dress looked amazing ... and the legs worked as planned.

The audience was surprised and interested, a local television station even made a report about that dress!

I named my dress "SPID3R TOP", because I did not have enough grey Technic beams to build the whole dress, but methinks, that doesn't matter at all! ;)

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--> <http://lego.brandls.info/>

--> <https://www.youtube.com/user/brandlsinfo>

--> <http://anoukwippecht.nl/>

