# FITTING FASHION USING MACHINE LEARNING

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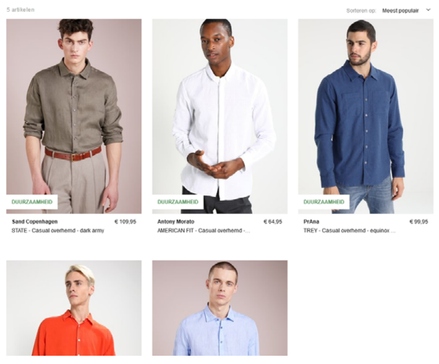
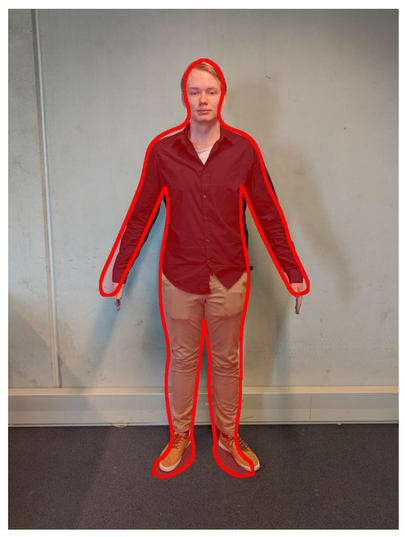
## Online Clothes-Shopping

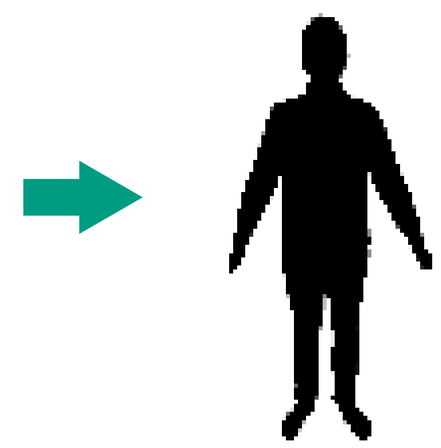


Online shopping for clothes can be hard, because you cannot directly try on apparel. Because of this, webshops offer the service to take in returns when clothes turn out not to fit. For some shops, this is half of their total shipped clothing items, resulting in tremendous costs. This calls for solutions to help prevent such problems.

## Machine Learning for Size Estimation

Our goal: an online tool which can estimate a person's body measurements based on 2D photographs of that person. In the tool, you can upload your pictures, after which your sizes are determined and a 3D model of your body is generated.





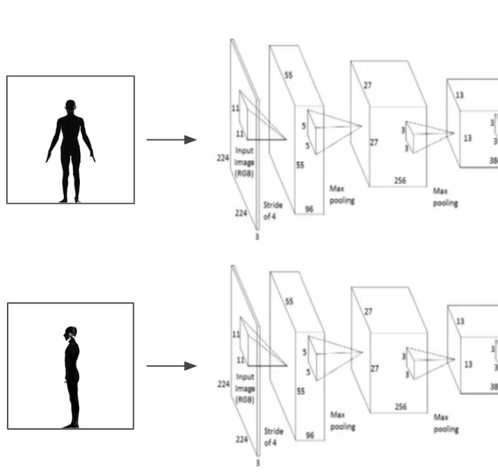
FF-NET





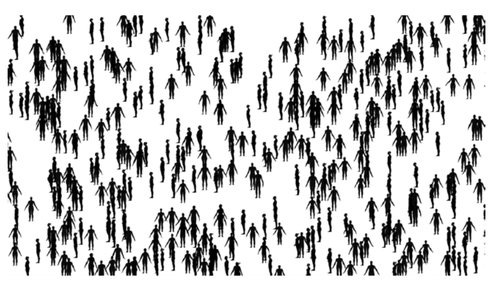


## Training Neural Networks

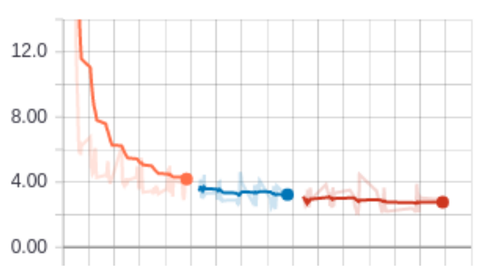



*Predicted size*

*Deep learning network: FF-net*



*Dataset:*
*4012 silhouettes + measurements*




*Training:*
*Decrease in percentual error rate*

Our approach relies on a model generated through machine learning. We use a convolutional neural network (based on AlexNet) that is trained on a dataset of 2D images based on 3D scans of people with their corresponding measurements.

## Open Challenges

- Improving speed and accuracy of FF-net and 3D model generation
- Rendering clothes on the virtual character
- Animating characters
- VR/AR support

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