

## Critical Making

Project outside of course scope

UNIVERSITY OF COPENHAGEN



# Critical Making

Do you also think of Sheldon Cooper from Big Bang Theory when you hear Autism & Computer Science in the same sentence?

But you know, that Sheldon is not a true representation of what being Neurodivergent means - and would like to change that story?

Do you want to learn how to use the tools in our makerspace?

Do you want to unleash your inner artist and have fun while learning?



# Who are we?



Jenny-Margrethe Vej

Research Assistant & IT  
Project Manager

MSc in Computer Science

DEI / ASD / ADHD Expert &  
podcast host of the Danish  
podcast Diagnoseklubben

*Fun Fact: Spend 1.5 years at  
law school & started at DIKU  
to prove that women belong  
here*



Pernille Bjørn

Professor &  
Deputy Head of Department  
for Research

Winner of the DANWISE Prize  
2023 & SCIENCE  
Dissemination Award 2021



Ellie Thrane Christiansen

Research Assistant

Specialized in User-centered  
Design & Accessibility

MSc in IT, Digital Design &  
Communication

*Fun Fact: Wanted to become  
a furniture woodworker before  
starting a Master at ITU*



Kellie Anne Dunn

PhD Fellow

Co-designer & builder of  
wearable e-textile costume for  
the Atari Women project

Former Lab Manager at  
University of Washington  
College of Engineering

Former Master Craft Artisan &  
Theatre Crafts Instructor at  
Washington School of Drama  
and Seattle University



Valeria Borsotti

PhD Fellow

Tech anthropologist

Member of BEVICA Universal  
Design Research Hub & DEI  
expert

*Fun Fact: Used to be a  
professional fine arts  
printmaker*



Morten Engell-Nørregård

Lab Manager at DIKU  
supporting research with  
practical aspects such as  
fabrication of physical artifacts  
or robotics parts

PhD in Computer Science

Former goldsmith journeyman  
& Design Consultant at Georg  
Jensen

# What are we going to learn?

## Learning Objectives

By the end of this project, the student will have

- Knowledge of
  - Theories on critical design
  - User centred design in makerspaces
- Skills to
  - Analyse the barriers of neurodivergent groups
  - Innovate through iterative prototyping and critical design in a makerspace
- Competences to
  - Analyse invisible barrier and 'taking-for-granted' assumptions in applying user centred design
  - Design critical artefacts challenging the 'taking-for-granted' assumptions
  - Innovate and push boundaries of Computer Science as a field

## How are we going to learn?

- Inspired by GRACE – an interactive Origami installation & Application
  - Celebrated the 70<sup>th</sup> anniversary since the first computer bug was found
  - Combines history with making & technology
- Create design artefacts which challenge existing, stereotypical narratives in Computer Science, while manifesting counter-narratives using digital and analogue materials
- Interact & collaborate with advocacy groups such as the Autism Association & the Danish Society of Engineers (IDA)



# What do we mean by 'Artefact'?

- Explore visualization of The Spoon Theory
- Or some visualization of Dyslexia?

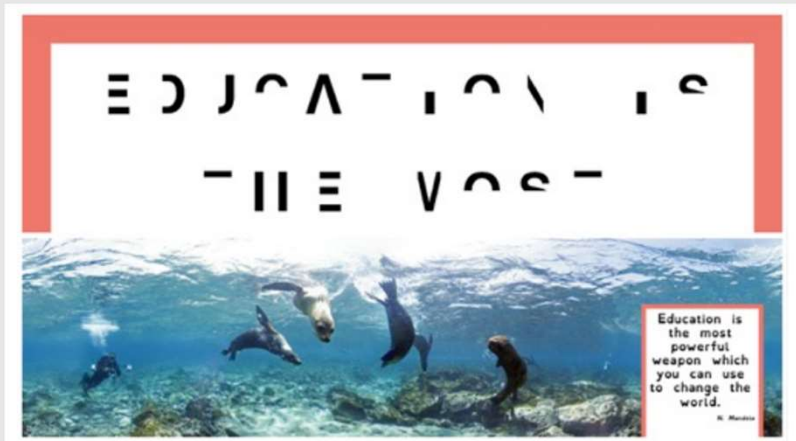


Figure 1 from "Fostering Cooperative Activism through Critical Design" by Menendez-Blanco et al

The Spoon Theory

DYSAUTONOMIA INTERNATIONAL

AWARENESS
 ADVOCACY
 ADVANCEMENT

The Spoon Theory is a creative way to explain to healthy friends and family what it's like living with a chronic illness. Dysautonomia patients often have limited energy, represented by spoons. Doing too much in one day can leave you short on spoons the next day.

**If you only had 12 spoons per day, how would you use them?** Take away 1 spoon if you didn't sleep well last night, forgot to take your meds, or skipped a meal. Take away 4 spoons if you have a cold.

get out of bed	bathe	make & eat a meal	go to work/school
get dressed	style hair	make plans & socialize	go shopping
take pills	surf the internet	light housework	go to the doctor
watch TV	read/study	drive somewhere	exercise

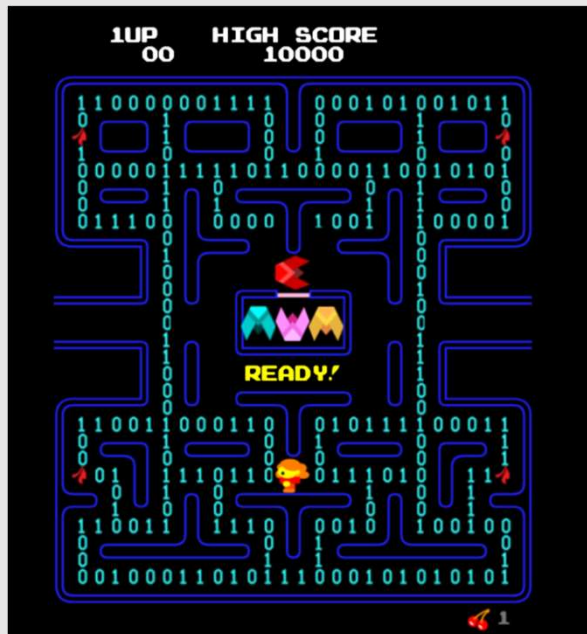
The Spoon Theory was written by Christine Miserando, which you can check out on her website [www.butyoudontlooksick.com](http://www.butyoudontlooksick.com).

[www.dysautonomiainternational.org](http://www.dysautonomiainternational.org)

# What do we mean by 'Artefact'?

## Atari bug fighter game

<http://www.atariwomen.org/game/>



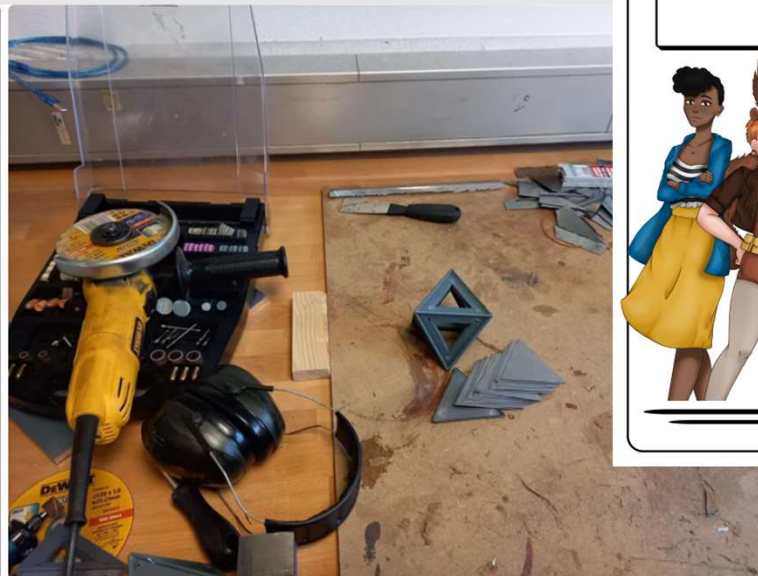
## Atari Women 8-bit Heroine Costume

<http://www.atariwomen.org/gallery/atari-women-8-bit-heroine-costume/>




# What do we mean by 'Artefact'?

## DOREEN – A norm-critical story-telling game




**DOREEN**  
ADVENTURE SHEET


GROUP NAME:  
\_\_\_\_\_

**IDEAL** 

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**BARRIERS** 


\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**STRENGTHS** 

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**OUR AMBITION FOR...**  
... THE FUTURE OF COMPUTING ...

CREATED BY:  
\_\_\_\_\_





# Practicalities

- Block 3 & 4
- Tuesdays between 14:15 and 16:30 here at Sigurdsgade or in our Makerspace
- First day: February 6
- Hand in report: June 11
- Exam: June 18 (TBC)
- 15 ECTS & lots of fun
- *The information shared today will be online on femtech.dk as soon as possible & can be send by email if you provide Jenny with your email address*

# Application

- Deadline: November 1<sup>st</sup> by end of day
- Apply by email to: [jvej@di.ku.dk](mailto:jvej@di.ku.dk) (you will receive a confirmation within 24 hours)
- Things to add (please also see course description):
  - Are you applying as individual or group? (specify names and email addresses)
  - Master or Bachelor student?
  - Why do you want to participate & what awesome skills are you bringing with you?
  - What are your expectations for collaborating with fellow students?
  - What other courses will you be following in Block 3 & 4 & what are their schedules?
  - Are you able to participate in this project on Tuesdays from 14:15 to 16:30?
  - Are you interested in Roskilde Festival (NOT MANDATORY!)

# Questions?