

# Amber Elferink



[amberelferink.com](http://amberelferink.com)



[AmberElferink](https://github.com/AmberElferink)



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*Robotics and Game master student with interest in Haptics.*

*Haptic feedback in virtual reality will provide lasting experiences. Developing technology in that field is my dream. For a more visual explanation with videos of my aspirations and experience, go to: [www.amberelferink.com](http://www.amberelferink.com)*

Education		Skills
Double Master: Robotics & Game and Media Technology		Languages
 <b>Sept 2020 – July 2022 (expected)</b> Current grade (8.3 / 10)	 <b>Sept 2019 – July 2022 (expected)</b> Current GPA 4.0/4.0 (8.46 / 10)	<ul style="list-style-type: none"><li>✓ C#, C++ (OpenGL), Arduino</li><li>✓ Python (Tensorflow, OpenCV)</li><li>✓ Javascript/NodeJS, SQLite</li><li>✓ HTML (+ pug)/CSS</li><li>✓ Dutch (native), English (C1-C2)</li></ul>
Computer Science Minor	Chemistry Bachelor	Others
<b>Sept 2017 – Dec 2018</b> GPA 4.0/4.0 (8.04 / 10)	<b>Sept 2014 – June 2017</b>	<ul style="list-style-type: none"><li>✓ Adobe Photoshop</li><li>✓ Adobe Illustrator (Basic skills)</li><li>✓ Arduino</li></ul>

## Work experience

### Software Developer

#### Fair2Media

May 2019 – August 2019

Filling the time between bachelor and master, I worked on the Ditou table at Fair2Media. Fair2Media is a small company with total of 5 people (excluding me). The Ditou table is an interactive table where a beamer projects a map of real places via Unity. On this map, you can use round disks as a cursor to place objects such as windmills and solar panels. The round disks are tracked by a camera above the table. My responsibility was to develop a new tracking algorithm for round disks on the Ditou table (C++ and OpenCV), and to make an environment in Unity loading, customizing and saving the map. Thereby, by using the tracked positions, 3D windmills and solar panels could be built on the map. The tracking and Unity environment communicated via NodeJS. The table is currently used to demonstrate the outcomes for building windmills and solar panels for citizens' initiatives.

### University Utrecht – Teaching Assistant

#### Freudental Institute

Oktober 2017 – 2020

Various tasks in education for high school students and teachers. Tasks including but not limited to:

- Assisting students with their Arduino projects in an Arduino U-talent course.
- Assisting in the Simulation and Games U-talent course.
- Assisting, writing manuals and setting up lessons in gas chromatography (GC) at remote high schools. Including setting up the GC equipment.
- Translating the Mathematical Kangaroo competition for the visually disabled.
- Helping organize and assisting at conferences such as the Woudschoten Chemie beurs and Research Funding Days.

## University Utrecht – Teaching Assistant Logics

November 2018 – Jan 2019

- Answering and helping students understand the material of the Logics course for the Computer Science Bachelor.

## University Utrecht - Student Tutor

Oktober 2017 – 2020

Helping students with the choices and challenges they face in studying the first year and informing them.

## Content Creator

KRO-NCRV

Nov 2015 – March 2016

For the television program Willem Wever, a scientific program for children:

- proposing subjects and experiments to perform on television
- advising the moderators about the correct explanation of the content.

## Projects

### Force feedback for elbow joint - [View short video on Portfolio](#)

- Proof of concept for force feedback exoskeleton for VR.
- Mechanical parts completed except for welds.
- Torque controller built from scratch (sadly shorted in later stage).
- Loadcell to measure force
- Done in spare time, not for study.

### VR-exo full force feedback locomotion - [Download research from portfolio](#)

- Market research for a full force feedback exoskeleton for lower extremities.
- Suitable for rehabilitation, telerobotics and infinite walking in virtual reality.
- Done in spare time, not for study.

### Hand detection - [View project wiki on Github](#)

- Built from a template allowing to load an image and save an image.
- Featuring handtracking and detection without an external library. The background is a beamer table, which occludes the hand. The hand can be rotated in any direction.
- Graded with a 9/10, built in C#.

### Basic Ray Tracer - [View project wiki on Github](#)

- Built from a template enabling to color individual pixels on the screen.
- Featuring refraction, anti-aliasing, triangle support and spotlights.
- Graded with 10/10, built in C#.

### Webshop Fastdining - [View project wiki on Github](#)

- Built for the web technology course.
- Includes a login, register, update profile, buying products and order history.
- Graded with 9.75/10.
- Built with Node.js + ExpressJS, Javascript, SQLite, HTML and CSS.

**View many more projects and videos on my Portfolio:**

**[www.amberelferink.com](http://www.amberelferink.com)**

