



DE ENERGIEBESPAARDERS

Using innovation and technologies based on data to make complex things simple and thereby create the energy system of the future.

# TU Delft Geomatics & GIMA MSc Thesis subjects.

Stimulation of innovation.

[De Energiebespaarders](#) is a scale-up based in Amsterdam. We are the largest online platform that provides installation as-a-service to residential households. Our turnkey solution helps homeowners to make their homes more energy-efficient. We sell insulation, solar panels and heat pumps (including financing).

**Our mission is:**

*“Reducing the impact on Earth for the generations to come by making energy-positive living accessible for everybody”*

**We do this by:**

Our team consisting of 30-40 bright minds is a mix of engineers, software developers, designers, psychologists, and business developers. Our ambitious team accelerating the energy transition and with this, we are realizing a quarterly growth of 40%.

**Join us to shape the energy system of the future!**



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### Doing an internship at De Energiebespaarders. What are the benefits?

- Innovative ideas will directly be implemented to increase the speed of the energy transition.
- Possibilities to work out pilots in local communities via the nationwide network of De Energiebespaarders.
- An enormous pile of data of private home-owners for creating a very precise model.
- Learn from a multi-disciplinary team of TU Delft students and learn to pool knowledge to accelerate start-ups.

### Our projects:

We are always working on new projects to increase our positive impact on the climate. Some projects are in collaboration with partners to have more data, more knowledge, and a bigger test-environment.

We currently have 1 main research topic defined:

- *3Dwellig GUI*

Nonetheless, other high-potential projects may always be suggested; we are open to new ideas!

Are you interested to join us on our mission? (Or just want to get some free coffee)  
Contact us!

**Talent@energiebespaarders - 06 1361 4903**



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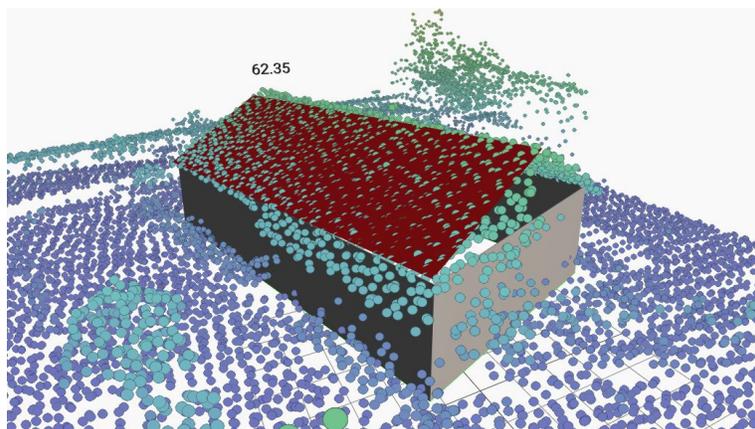
## 3Dwelling GUI

*Visualize, draw and measure houses in the built environment in the Netherlands based on AHN3 dots.*

### Description

Our developers have developed a proof-of-concept for measuring building dimensions from a LiDAR point cloud (AHN3). We noticed there is much potential for further use of this data, in combination with other datasets and our existing infrastructure for performing energy calculations. This will especially be groundbreaking for dimensioning heat-pump systems for the dwelling.

Having the 3D dwelling visualization will also help to energy-advisors to display the home-owners how the possible retrofit will make the dwelling look, and prevent miscommunication to the installers. This way it is possible to build more trust and lower the barrier to choose for specific solutions.



**Primary goal** A tool for modeling building envelopes (walls, roof, floor, windows)

**Secondary goals** Automatic surface area estimation, interactively measuring building dimensions, assigning



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### **Possible challenges:**

- Automatically extracting roof geometry from LiDAR point clouds
- Estimating wall dimensions from roof and building footprint
- Estimating heat-pump effectiveness by simulating energy transmission and heat loss from building envelope
- Visualizing potential installation plans for insulation, solar panels or heat pumps to our customers

### **Required skills:**

- Programming experience (Python, TypeScript and/or Javascript)
- Basic knowledge of 3D visualization technologies (e.g. WebGL, ThreeJS)

### **Nice-to-haves:**

- Knowledge of energy transmission for buildings
- 3D reconstruction algorithms

### **Who we are looking for:**

- Ability to rapidly iterate and meet deadlines.
- Ability to combine technology with creativity.
- Dare to doubt the system, there is always a better way.
- Enthusiastic to make a difference in the world.