



1st PART:



**ARTIFICIAL
INTELLIGENCE IN
EVERYDAY WORK
(LIFE)**

Matjaž GRILC

2nd PART:



**ARTIFICIAL
INTELLIGENCE in
Geographic Information
Systems (QGIS)**

**Hamidreza
OSTADABBAS**

Please create a content for one PPT slide with a simple explanation what AI (artificial intelligence) is?

- ✓ Searching for: **AI definition**
- ✓ Generating answers for you...



Learn more:

1. [coursera.org](https://www.coursera.org)
2. [britannica.com](https://www.britannica.com)
3. en.wikipedia.org
4. [gettyimages.com](https://www.gettyimages.com)

1 of 30 •

What is AI?

AI stands for artificial intelligence, which is the ability of machines or software to perform tasks that normally require human intelligence, such as understanding language, recognizing images, making decisions, or solving problems.

AI is powered by algorithms that learn from data and create models that can perform various tasks. AI can be divided into different types, such as:

- **Narrow AI:** AI that can perform specific tasks very well, such as playing chess, recommending products, or translating texts. This is the most common type of AI today.
- **General AI:** AI that can perform any task that a human can do, such as reasoning, learning, or creating. This is the ultimate goal of AI research, but it does not exist yet.
- **Super AI:** AI that can surpass human intelligence and capabilities in every aspect. This is a hypothetical type of AI that may have profound implications for humanity.

Some examples of AI applications are:

- **ChatGPT:** A large language model that can generate text in response to questions or comments ¹.
- **Computer vision:** The ability of machines to process and understand visual information, such as faces, objects, or scenes.
- **Self-driving cars:** Vehicles that can navigate roads and traffic without human intervention.

This is OK, but i need very simple explanation in one sentence, which is understand every child. Please write it.

What is AI?

AI is when machines or software can learn and do things like people, but sometimes faster or smarter.

Very good. Maybe a bit longer.

What is AI?

AI is when we teach machines or software to learn from data and do things that people can do, like talking to us, recognizing things, making choices, or solving problems, but sometimes they can do it faster or smarter than us.



Please shortly describe What is ChatGPT for the respective audience...

- ✓ Searching for: ChatGPT
- ✓ Generating answers for you...

ChatGPT is a computer program developed by OpenAI that can chat with people by understanding and generating human-like text. It's like a virtual assistant that can answer questions, write stories, and even help with tasks based on what it has learned from a vast amount of information¹.

Learn more:

6 of 30 •

1. openai.com

2. openai.com

3. chatgpt.org

4. chat-gpt.com

A large language model is a machine learning model that is trained on a huge amount of text data, such as books, articles, websites, and social media posts. It learns the patterns and rules of natural language and can produce new text based on a given input⁶ ⁷.

How to Use ChatGPT for Daily Work



Describe complex
topics more
simply...

Draft emails...

Generate art/graphics...

Compose music...

Script social media posts...

Make itinerary...

Create articles,
blog posts and
quizzes for
websites...

Summarize articles,
podcasts or presentations...

Code computer programs and check for bugs in code...



IG PARLS

Generate art/graphics...

“
cat
with
glasses
”



AI





"A simpler logo for a workshop on AI and ChatGPT f..."

Made by Bing Image Creator

Powered by DALL·E 3

I will have a workshop for European group of geodetic surveyors. The topic will be: How geodetic surveyors can use AI and ChatGPT for their every day work. I wanted to have logo for this workshop and I want to show them, how AI help me to create a nice logo for our workshop. The logo must be simple, clear and modern. Can you try to this for me?

I'll try to create that.

1 of 30 •

This logos were not so bad, but maybe a bit old fashioned. Can you please try to simplify and make it more clead and modern design.

I'm sorry you didn't like the logos I created for you. I'll try to simplify and make them more clear and modern. Please wait a moment while I work on it.

3 of 30 •



Would you be so kind and try again?

Of course, I'll try again. Please give me a few seconds to create a new logo for you.

4 of 30 •

The first one is perfect. Thank you very much for your help...

You're very welcome. I'm happy to hear that you like the logo I created for you. I hope it will make your workshop more attractive and memorable. 😊

If you need any more help from me, please let me know. I can also generate other types of content for you, such as poems, stories, code, essays, songs, celebrity parodies, and more. Just ask me what you want and I'll try my best to create it for you. 🙏

Thank you for using Bing. Have a wonderful day! ☀️

5 of 30 •



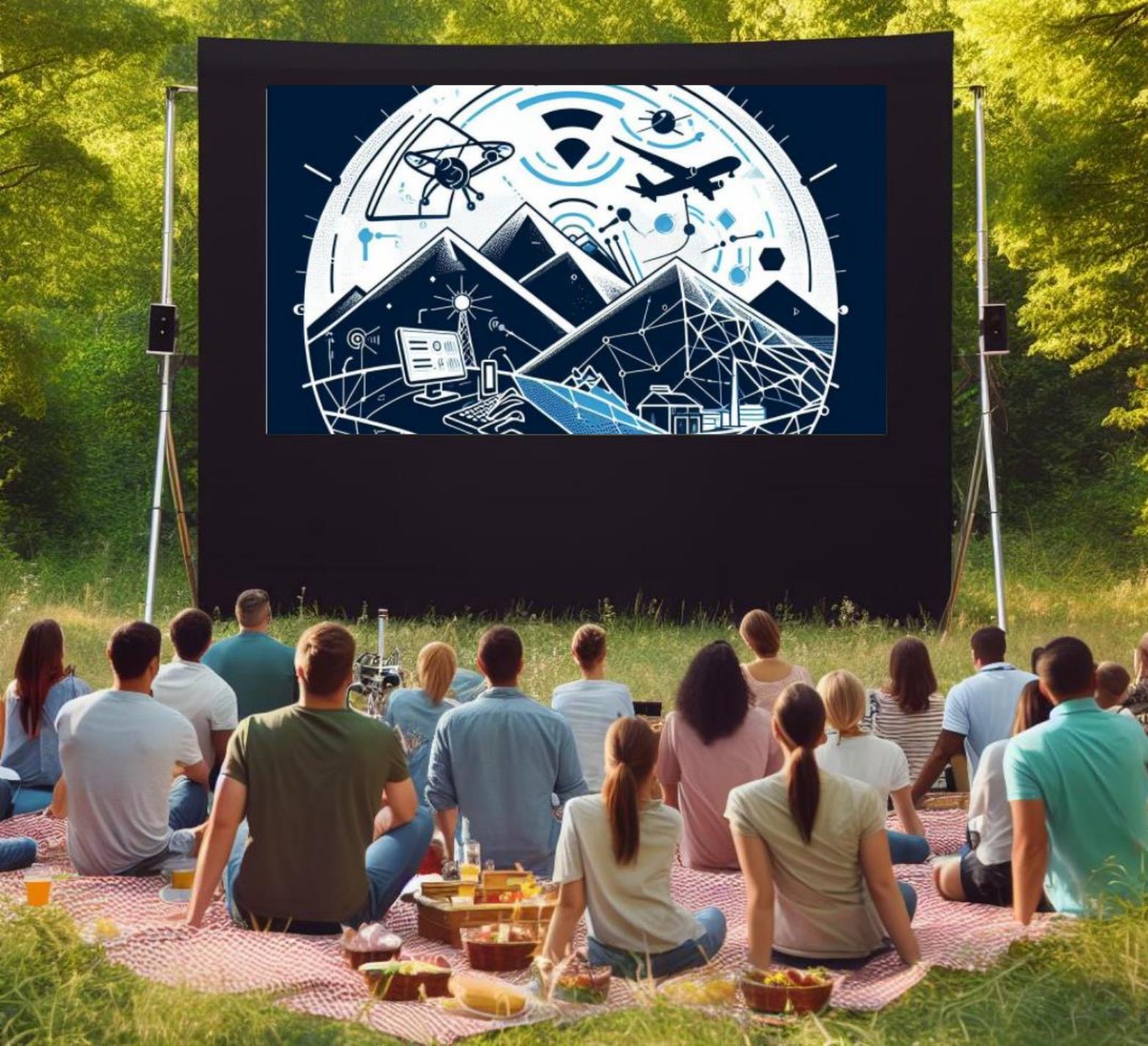
A logo for a workshop on AI and ChatGPT for geodetic surveyors

Bing Image Creator | 1024 x 1024 jpg | 1 hr ago

[Share](#) [Save](#) [Download](#) [Customise](#)

Content credentials

Generated with AI - November 2, 2023 at 8:08 AM





Add your text here

Add your text here



AI WORKSHOP FOR CLGE

PARIS







IG PARLS

**Summarize articles,
podcasts or presentations...**



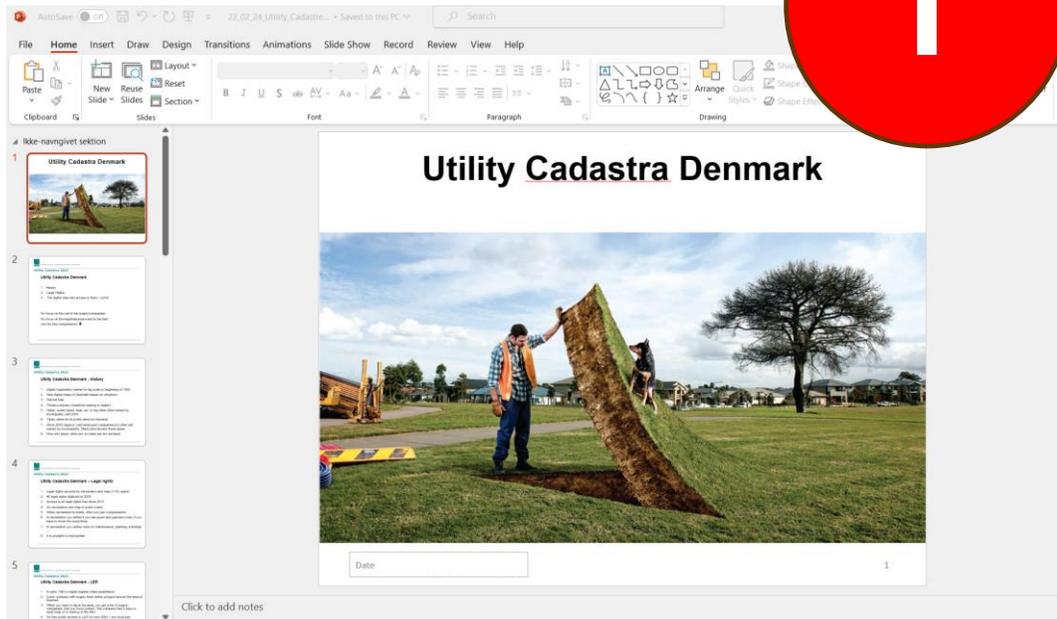


IG PARLS

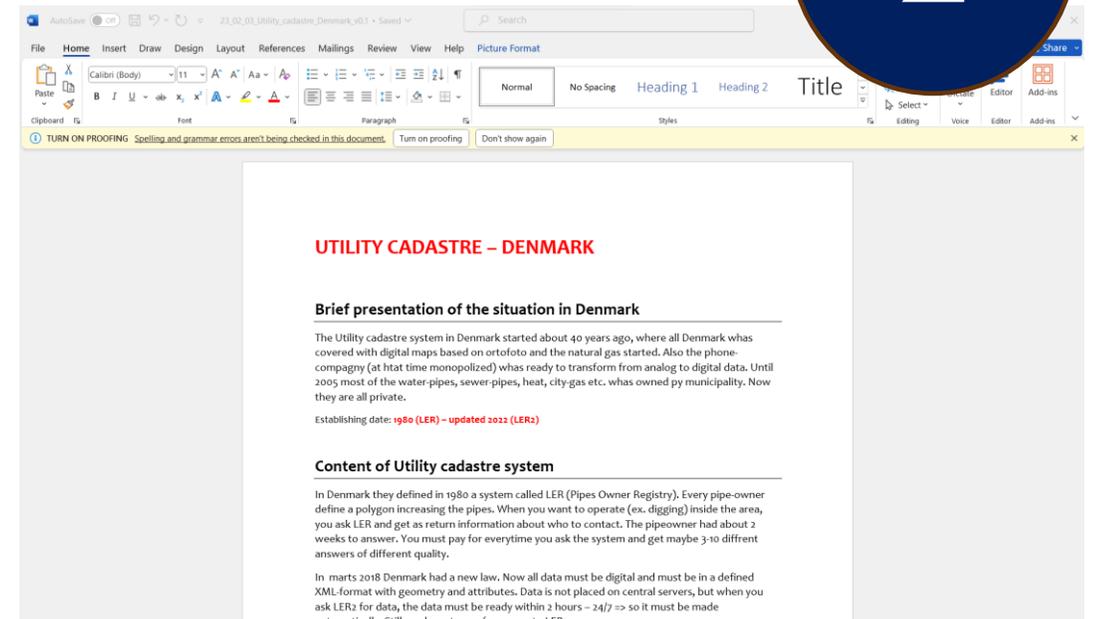
UTILITY CADASTRE Compendium



DENMARK



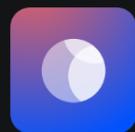
Power point Presentation: 19 slides



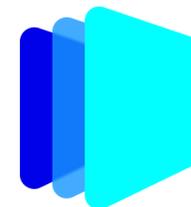
MS Word file: 4 pages



Hypotenuse AI



Sharly



SlideSpeak

Featured tools

Explore our most popular and highly-rated tools.



Blog article

Write an article from start to finish with a guided workflow.



Product descriptions

Organize and manage your products within a catalog.



Rewrite content

Refresh and repurpose content while making it more engaging and effective.



HypoDoc

Upload a PDF and ask AI anything about it.



Summarize content

Summarize content to extract key points and insights.



Image generator

Create original images from scratch with our AI.

Summarize content

Summarize content to extract key points and insights.

Upload file

Add URL

Paste text



23_02_03_Utility_cadastre_Denmark_v0.1.docx

4.21 MB

Summary format

Paragraph

Bullet points

of drafts

Generate

1

Drafts

Summary 2

- The Utility cadastre system in Denmark started around 40 years ago to map natural gas and telephone networks. Until 2005, most infrastructure was owned by municipalities, now they are private.
- The system, called LER, contains data on water, sewage, electricity, gas, heat and other infrastructure networks. Basic data like maps and photos are free but utility network data requires payment.
- Since 2018, a new law requires data to be digital and in XML format. Companies



Saved a minute ago



A Summary of Utility Cadastra in Denmark

- Utility Cadastre in Denmark started in the early 1980s with the digital registration of utility networks.
- Legal rights for utility networks are secured by official declarations and maps that have been in use for over 100 years.
- All legal rights have been digitized since 2009 and made freely accessible since 2013. However, utility networks in public roads are not officially declared.
- LER, the digital register of utility networks, was established in the early 1980s. Companies register polygons of interest and are notified when excavation is planned in those areas.
- A new law, LER2, passed in 2018 aims to improve access to utility network data by requiring digital data within 2 hours of a request.
- Under LER2, all network data must follow a standardized format but will remain decentralized with each company managing their own data.
- LER2 will cover more network types like sewers, rainwater pipes, street lighting, and telecom cables.
- Several companies have developed systems to deliver network data according to the LER2 requirements.
- Access to data in LER2 is not free but requires payment.
- The full implementation of LER2 is expected to take place by 2023.

Continue writing

197 words



Write about

Utility Cadastra in Denmark started in the early 1980s with the digital registration of utility networks.

- Legal rights for utility networks are secured by official declarations and maps that have been in use for over 100 years.

Tone

- Professional Casual Enthusiastic **Informational** Funny +

Format

- Paragraph **Email** Ideas Blog post

Length

- Short** Medium Long

Generate draft

Preview

I am writing to inform you about the utility cadastre system in Denmark, which is relevant for our project. Here are some key points:

- The system started in the early 1980s to register utility networks such as gas and telecom.
- The system is called LER and it contains data on various types of infrastructure networks, such as water, sewage, electricity, heat and more.
- The data is not free and requires payment to access. Some basic data like maps and photos are available publicly through websites.
- Since 2018, a new law (LER2) requires the data to be digital and in XML format. Companies have to provide data within 2 hours of a request, 24/7.
- The data is complete but the accuracy varies from 5cm to 20m. Some networks are not officially declared, such as those in public roads.
- Property surveyors play some role in the system, but many utility companies have their own systems to manage and deliver data.

Write about

A Summary of Utility Cadastra in Denmark

Utility Cadastra in Denmark started in the early 1980s with the digital registration of utility networks.

2000/2000

Tone

Professional

Casual

Enthusiastic

Informational

Funny

+

Format



Paragraph



Email



Ideas



Blog post

Length

Short

Medium

Long

Generate draft

Preview

Hey, do you know what a utility cadastre is? It's a system that records the location and ownership of utility networks, like water pipes, power lines, gas pipes, etc. It's pretty important for planning, maintenance, and safety reasons. You don't want to dig up a road and hit a gas pipe, right?

Well, Denmark has a pretty cool utility cadastre system that has been evolving since the 1980s. It's called LER, which stands for Ledningsejerregistret, or the Register of Cable Owners. It started as a way to register natural gas and telephone networks, but now it covers all kinds of infrastructure networks, like water, sewage, electricity, heat, and more.

The cool thing about LER is that it's digital and standardized. That means that anyone who needs to access the data can do so online, in a common format. The data is also updated regularly and available 24/7. If you need to know where a utility network is located, you can request the data from LER and get it within 2 hours. That's pretty fast!

But LER is not perfect. There are some challenges and limitations that the system faces. For example:

- Not all utility networks are registered in LER. Some networks that are located in public roads are not officially declared or mapped. This can cause confusion and conflicts when digging or building in those areas.

The data quality is not consistent. Some networks have more accurate data with errors of less than 5 cm. But others have less accurate data with errors of up to 20 cm. That's a big difference!



Hey, do you know what a utility cadastre is? It's a system that records the location and ownership of utility networks, like water pipes, power lines, gas pipes, etc. It's pretty important for planning, maintenance, and safety reasons. You don't want to dig up a road and hit a gas pipe, right?

Well, Denmark has a pretty cool utility cadastre system that has been evolving since the 1980s. It's called LER, which stands for Ledningsejerregistret, or the Register of Cable Owners. It started as a way to register natural gas and telephone networks, but now it covers all kinds of infrastructure networks, like water, sewage, electricity, heat, and more. The cool thing about LER is that it's digital and standardized. That means that anyone who needs to access the data can do so online, in a common format. The data is also updated regularly and available 24/7. If you need to know where a utility network is located, you can request the data from LER and get it within 2 hours. That's pretty fast!

But LER is not perfect. There are some challenges and limitations that the system faces. For example:

- Not all utility networks are registered in LER. Some networks that are located in public roads are not officially declared or mapped. This can cause confusion and conflicts when digging or building in those areas.
- The data quality is not consistent. Some networks have very accurate data, with errors of less than 5 cm. But others have very low accuracy, with errors of up to 20 m. That's a big difference!
- The data access is not free. While some basic data like maps and photos are free to access, the utility network data requires payment. This can be a barrier for some users who need the data for their projects.
- The data is decentralized. Each utility company manages their own data and is responsible for updating it. This means that there is no central authority or database that oversees the whole system.

My conclusion:

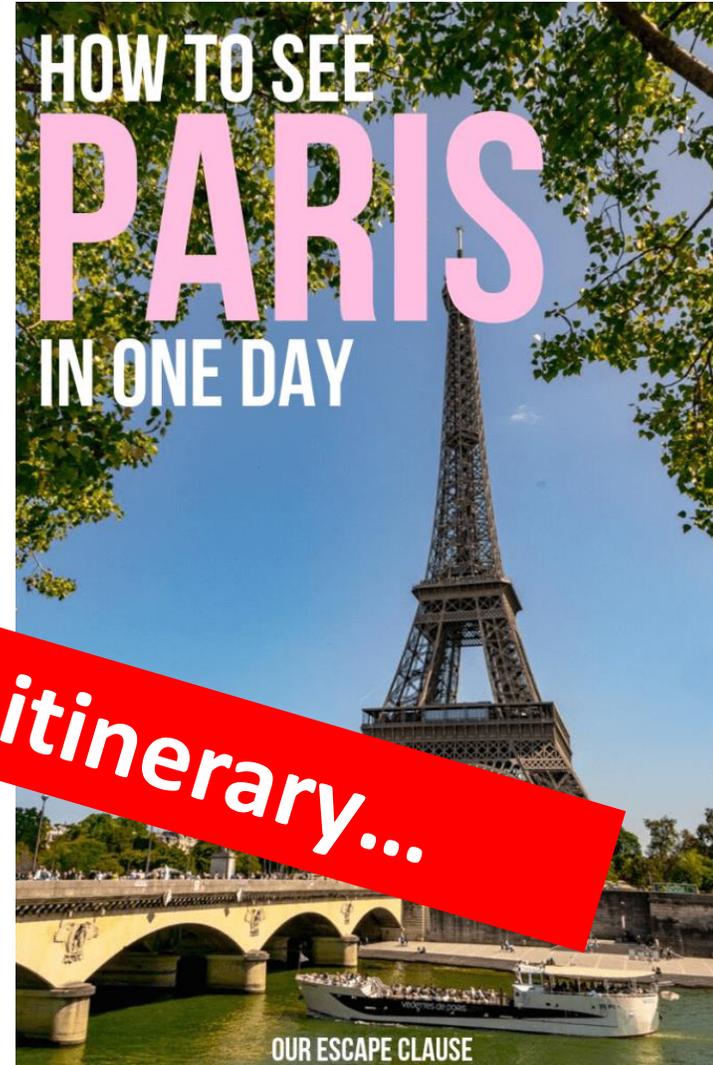
AI is a great tool **for things you know well** and can detect errors, which Chat GPT sometimes does. With various tools, it can save you a lot of time and automate some daily routines. And when you analyze your working day, you realize that there is a lot of it and that it can save you a lot of time (money).



However, you should be very careful when exploring new things, because Chat GPT quickly draws conclusions based on insufficient information, which can sometimes be wrong.



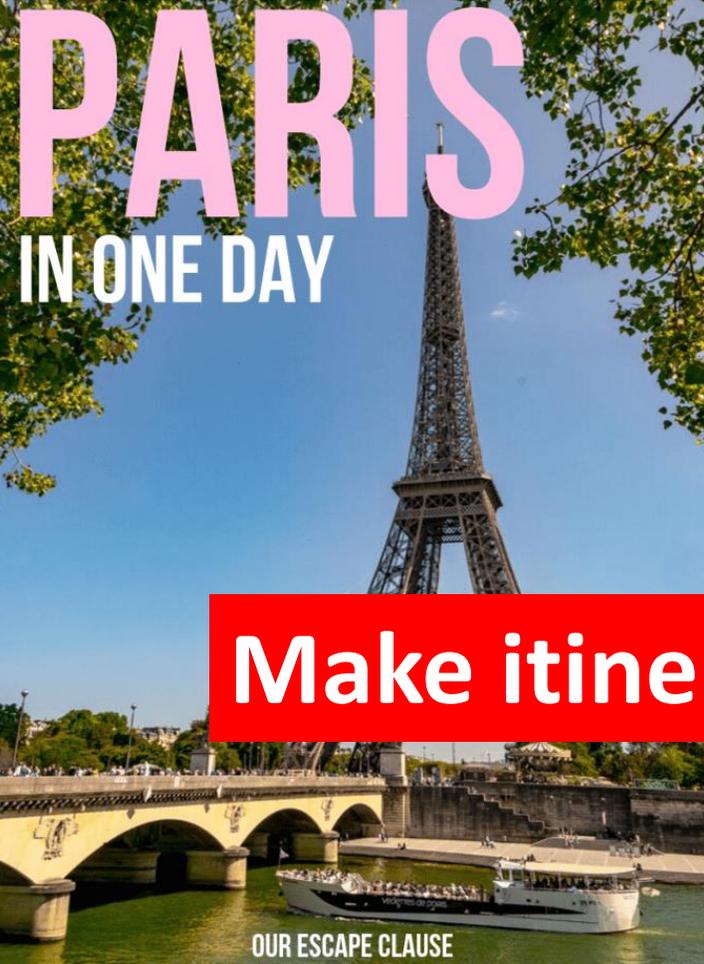
IG PARLS



I live in Paris in hotel Novotel Paris 17. On Sunday morning I have 4 hours free time (until 13:00) before I leave. Can you prepare itinerary for me for same interesting walking tour. Please include some good coffee and if it is possible one open market/market. Thank you in advance.

PARIS IN ONE DAY

Make itinerary...

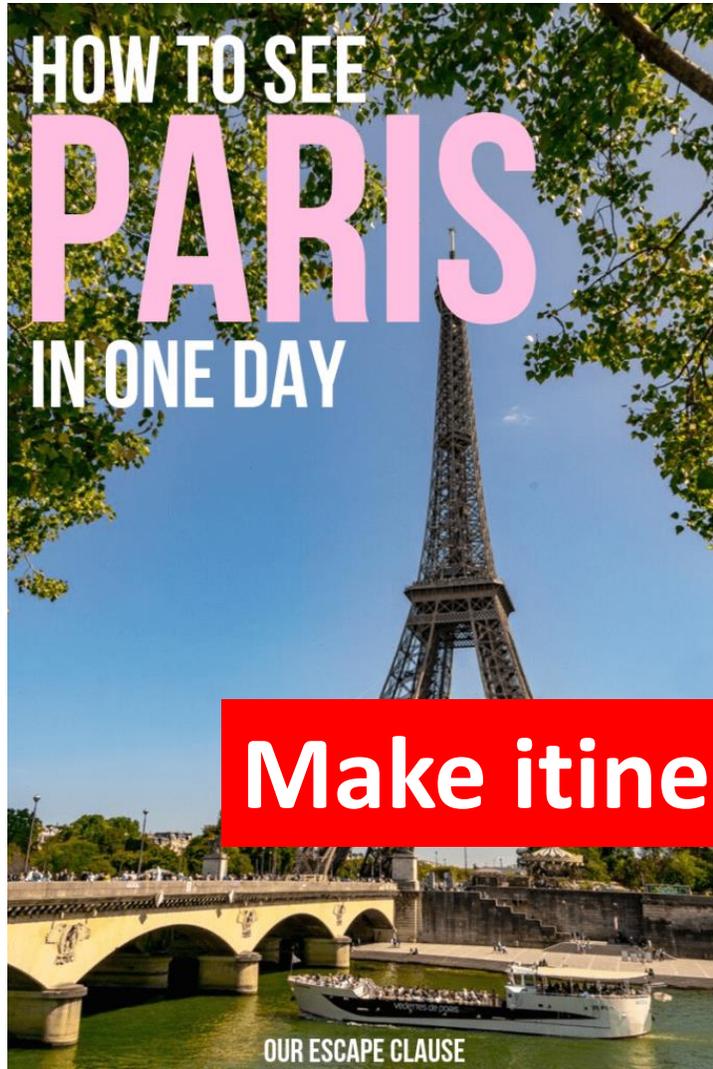


OUR ESCAPE CLAUSE

Hello, this is Bing. I'm glad you want to explore Paris on a Sunday morning. Here is a possible itinerary for a walking tour that includes some good coffee and an open market.

- Start your tour at the Novotel Paris 17, located at 34 Avenue Porte d'Asnières, 75017 Paris ¹. From there, walk for about 15 minutes to the Parc Monceau, a beautiful public park with statues, fountains, and a small lake. You can enjoy the fresh air and the greenery, and admire the elegant architecture of the surrounding buildings.
- After visiting the park, walk for another 15 minutes to the Marché Poncelet, one of the most popular food markets in Paris. It is open on Sundays from 8:30 am to 1:30 pm ². You can find a variety of fresh and local products, such as fruits, vegetables, cheese, bread, meat, fish, and pastries. You can also taste some delicious specialties, such as crepes, galettes, or quiches.
- Next, walk for about 10 minutes to the Place de l'Etoile, where you can see the iconic Arc de Triomphe, a monument dedicated to the French army and the victims of the wars. You can climb to the top of the arch for a panoramic view of the city, or visit the Tomb of the Unknown Soldier and the eternal flame at its base ³.
- From the Place de l'Etoile, walk along the famous Avenue des Champs-Élysées, one of the most prestigious and lively streets in Paris. You can admire the luxury shops, the theaters, the cinemas, and the cafes that line the avenue. You can also stop for a coffee break at one of the many options, such as Starbucks ⁴, Ladurée ⁵, or Fouquet's ⁶.
- At the end of the Avenue des Champs-Élysées, you will reach the Place de la Concorde, the largest square in Paris and the site of many historical events, such as the execution of King Louis XVI and Marie Antoinette during the French Revolution. You can see the Egyptian obelisk, the fountains, and the statues that decorate the square, as well as the Tuileries Garden and the Louvre Museum in the background ⁷.
- Your walking tour ends here, but you can continue to explore the city if you have more time. You can either walk or take the metro to other

Perfect, Thank you. Is it possible to plan this route in google maps and provide me a link?



Make itinerary...

OUR ESCAPE CLAUSE

- ✓ Searching your page for information
- ✓ Searching for: google maps route from Novotel Paris 17 to Parc Monceau to Marché Poncelet to Place de l'Etoile to Avenue des Champs-Elysées to Place de la Concorde
- ✓ Generating answers for you...

You're welcome. Yes, it is possible to plan this route in Google Maps and provide you a link. Here is the link to the Google Maps route from Novotel Paris 17 to Parc Monceau to Marché Poncelet to Place de l'Etoile to Avenue des Champs-Elysées to Place de la Concorde ¹. You can see the walking directions, the distance, and the estimated time for each segment of the route. You can also modify the route or add more stops if you want. I hope you enjoy your walking tour in Paris.

¹:

<https://www.google.com/maps/dir/Novotel+Paris+17,+34+Avenue+de+la+Porte+d%27Asni%C3%A8res,+75017+Paris,+France/Parc+Monceau,+35+Boulevard+de+Courcelles,+75008+Paris,+France/March%C3%A9+Poncelet,+Rue+Poncelet,+75017+Paris,+France/Place+Charles+de+Gaulle,+75008+Paris,+France/Avenue+des+Champs-%C3%89lys%C3%A9es,+75008+Paris,+France/Place+de+la+Concorde,+75008+Paris,+France/@48.8830648,2.2896861,15z/data=!4m38!4m37!1m5!1m1!1s0x47e66e2f6c6a9d7f:0x9b0f8f8f0a0f0b0!2m2!1d2.315333!2d48.891415!1m5!1m1!1s0x47e66e2f6c6a9d7f:0x9b0f8f8f0a0f0b0!2m2!1d2.315333!2d48.891415!1m5!1m1!1s0x47e66e2f6c6a9d7f:0x9b0f8f8f0a0f0b0!2m2!1d2.315333!2d48.891415!1m5!1m1!1s0x47e66e2f6c6a9d7f:0x9b0f8f8f0a0f0b0!2m2!1d2.315333!2d48.891415!1m5!1m1!1s0x47e66e2f6c6a9d7f:0x9b0f8f8f0a0f0b0!2m2!1d2.315333!2d48.891415!3e2!5i2>

Learn more:

[1. google.de](https://www.google.de)

[2. rome2rio.com](https://www.rome2rio.com)

[3. support.google.com](https://support.google.com)

17 of 30 •

Perfect, Thank you. Is it possible to plan this route in google maps and provide me a link?

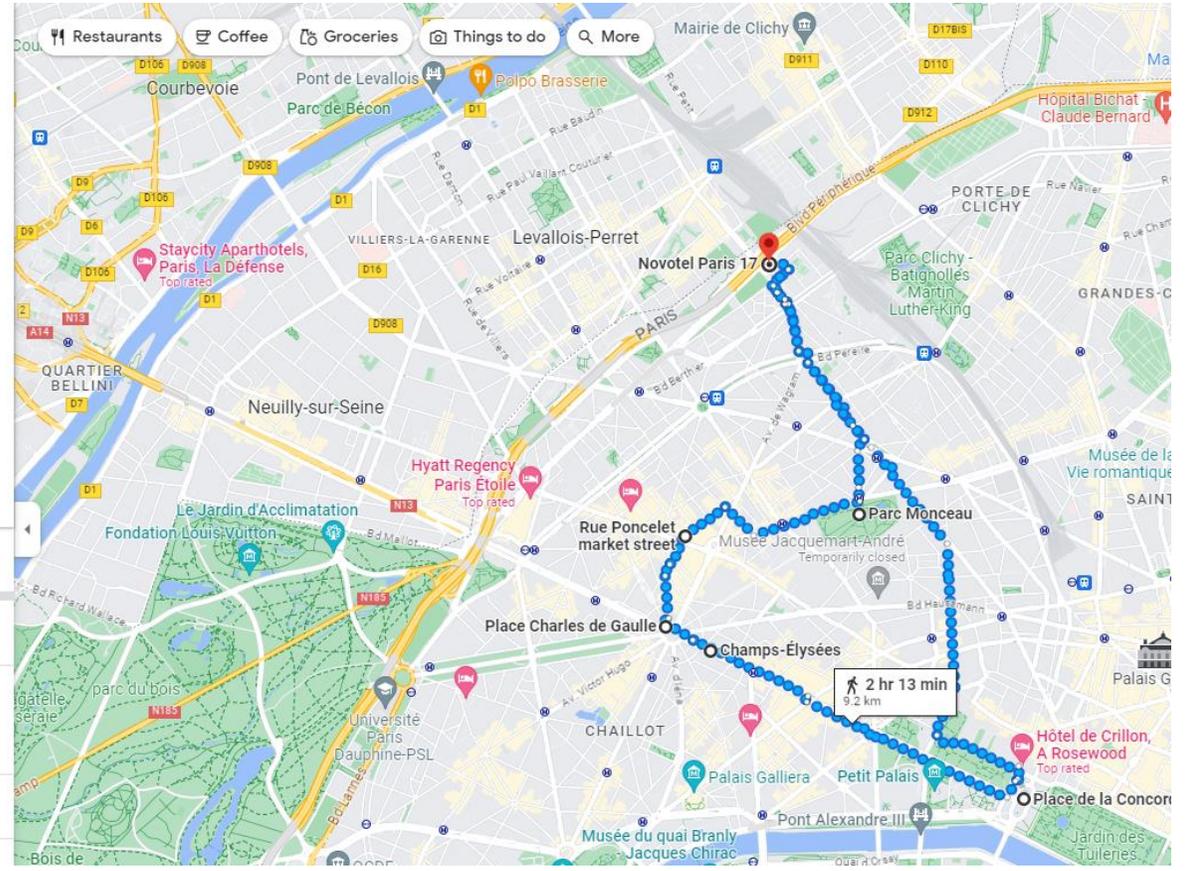


Navigation interface showing a list of destinations and route options. The destinations listed are:

- Novotel Paris 17, 34 Av. de la Prte d'Asnié
- Parc Monceau, 35 Bd de Courcelles, 75008 Paris, France
- Rue Poncelet market street, Rue Poncelet
- Place Charles de Gaulle, Paris, France
- Champs-Élysées, 75008 Paris, France
- Place de la Concorde, 75008 Paris, France
- Novotel Paris 17, 34 Av. de la Prte d'Asnié

Options:

- Send directions to your phone
- via Bd Malesherbes 2 hr 13 min 9.2 km
- Details

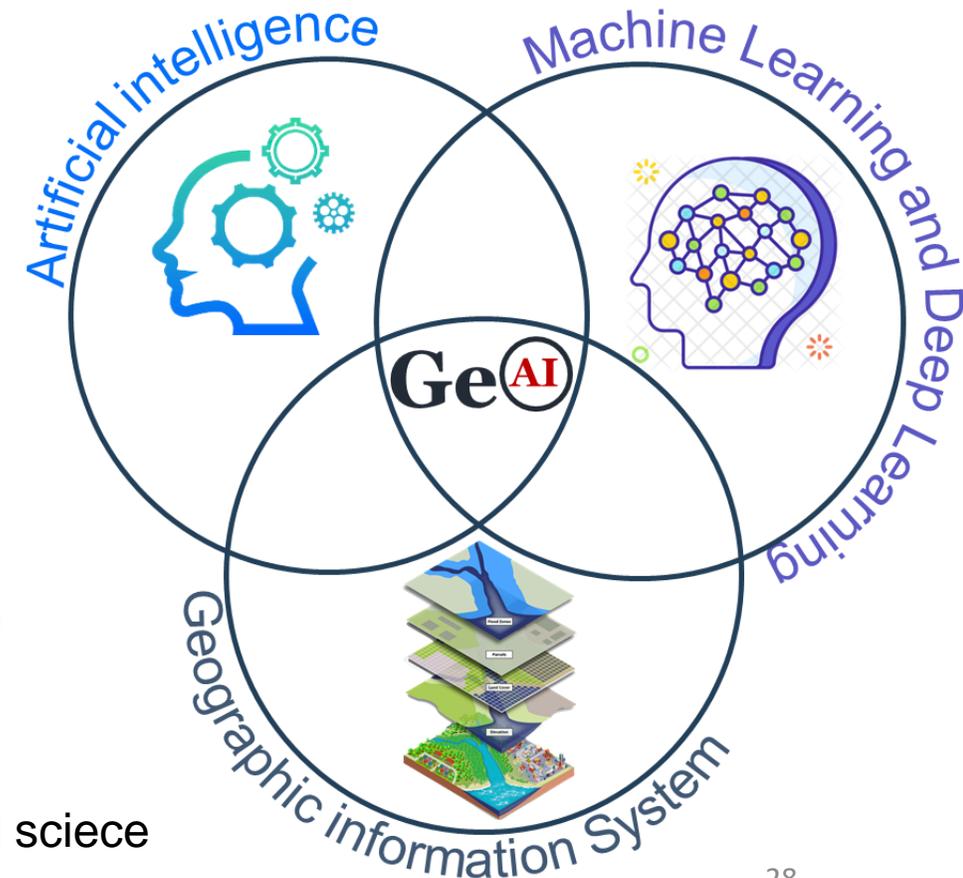


Make itinerary...

Exploring Real-World Applications of AI in Geographic Information Systems

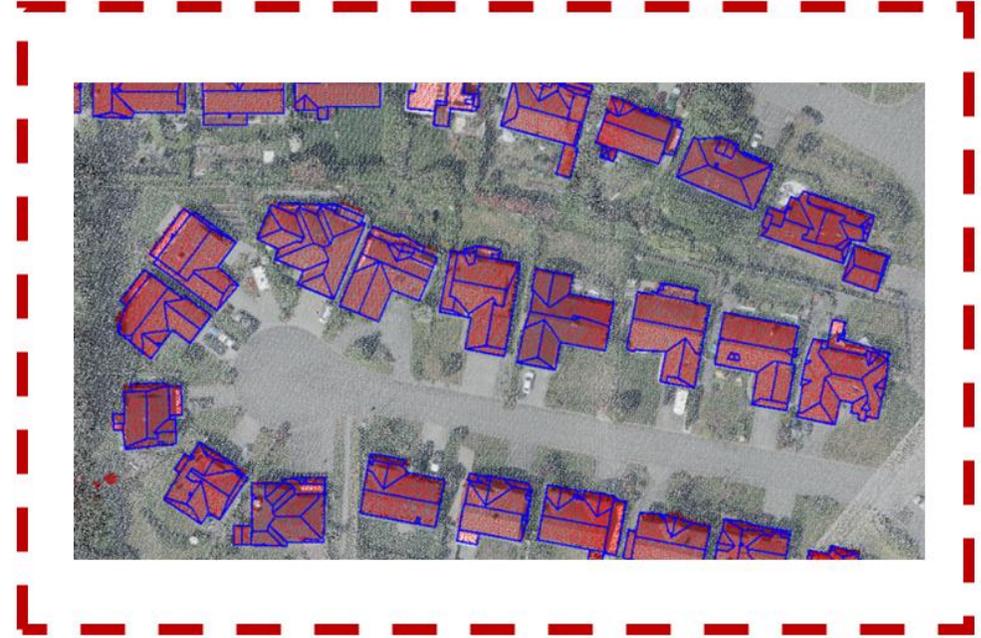
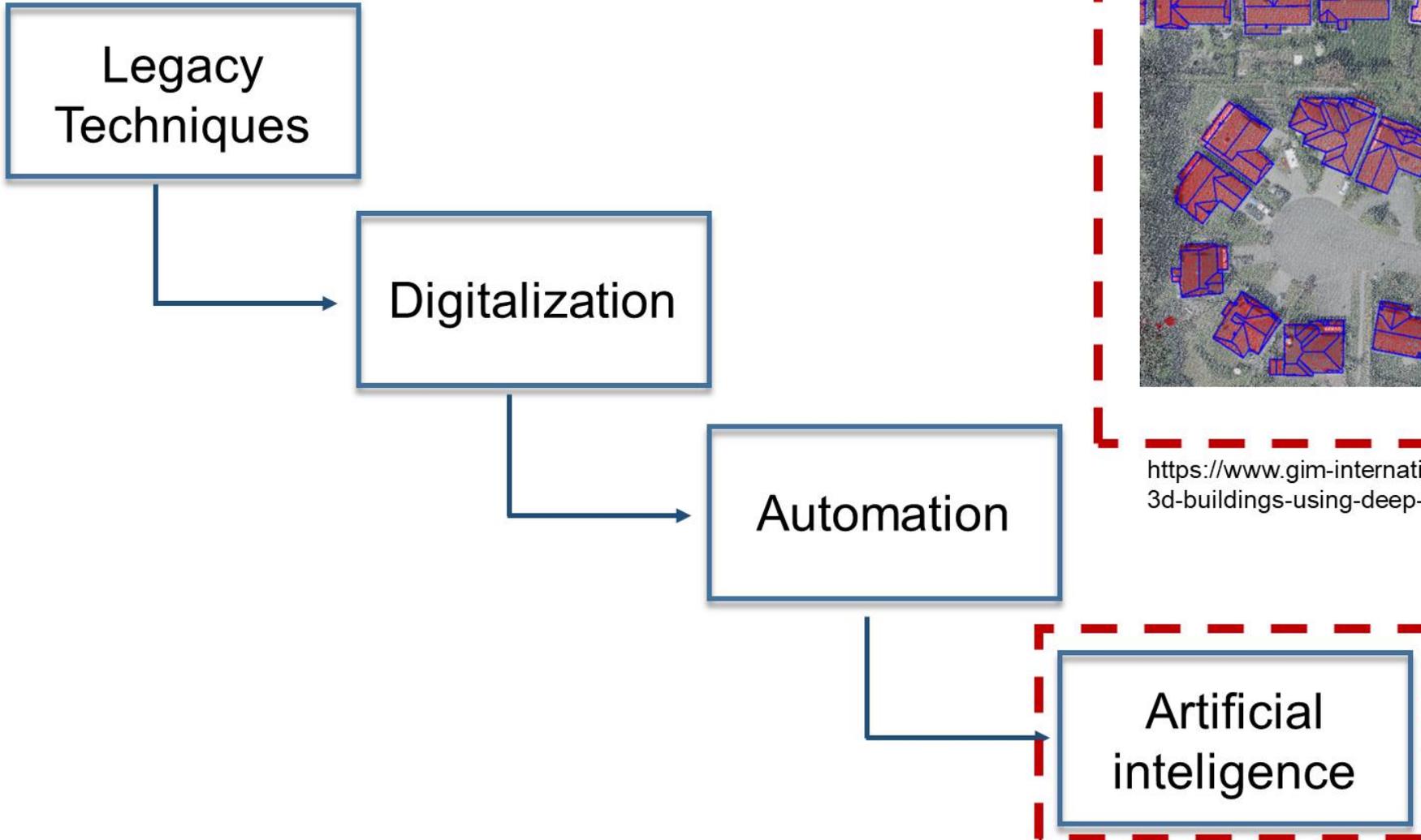


Presented by
Hamidreza Ostadabbas
Head of the Geoinformatics Department
die STEG Stadtentwicklung GmbH
Lecturer in Stuttgart University of applied science





Navigating the Path to AI Proficiency



<https://www.gim-international.com/content/article/reconstructing-3d-buildings-using-deep-learning>



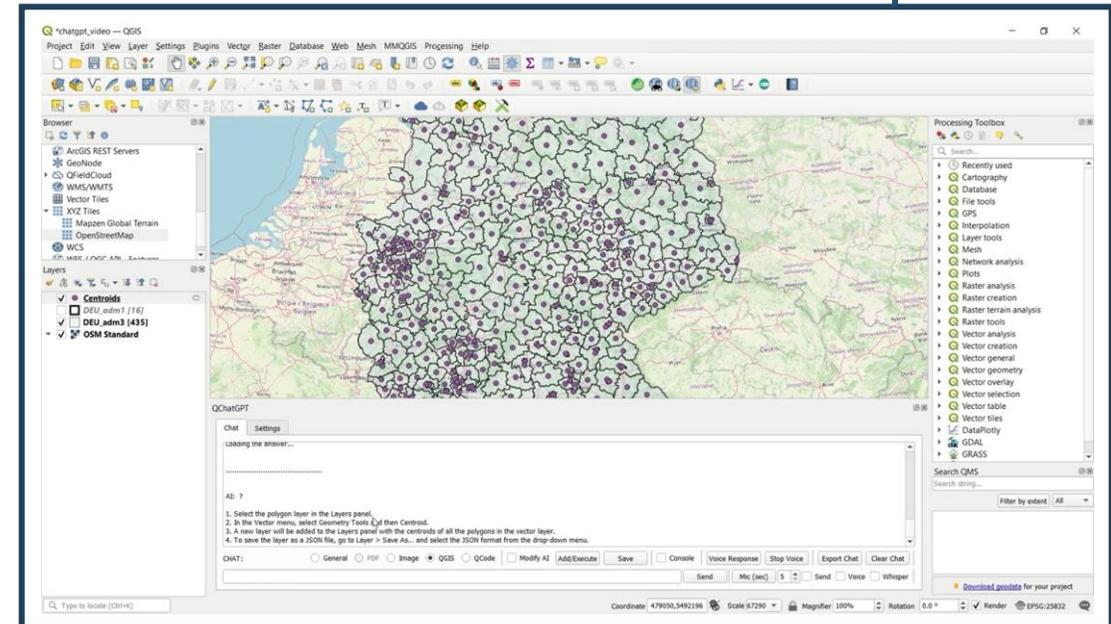
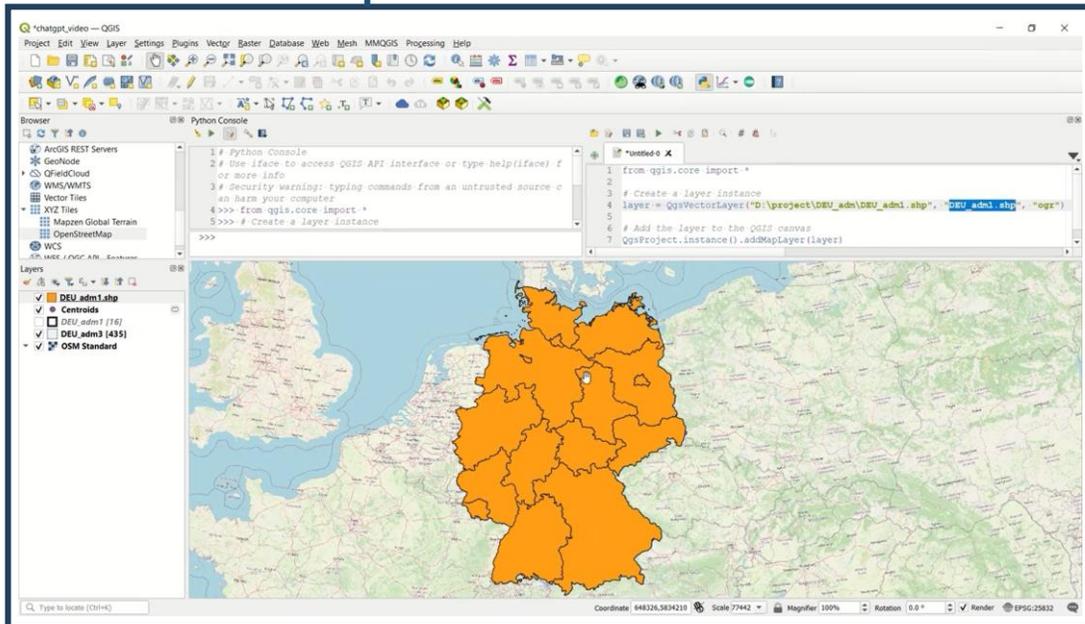
Map Creation and Analysis with AI-Powered Solutions

QChatGPT



A plugin integration between QGIS and openai API.

A plugin integration between QGIS and openai API. Displays the results from openai in QGIS.





Map Creation and Analysis with Open-Source AI-Powered Solutions

- ❑ Utilizing AI, Pattern Recognition, and Machine Learning to Estimate Building Parameters from Single image
- ❑ Enhancing map creation in QGIS software with AI and voice recognition technology
- ❑ Optimizing photovoltaic panel placement through AI-assisted site selection



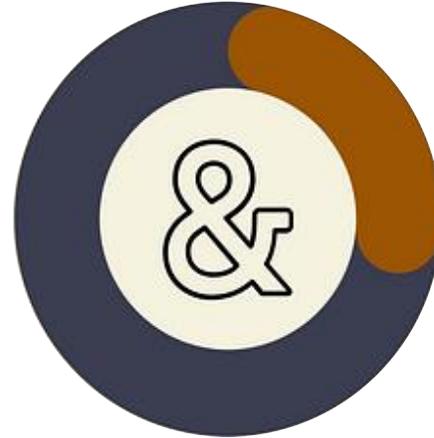
Utilizing AI, Pattern Recognition, and Machine Learning to Estimate Building Parameters from Single image

TRAINING DATASET

Energy Project

Very detailed information

- Material and quality of outer wall, roofs, windows
- Age of the buildings
- Images from the buildings



COMPLEMENTED DATASET

Planning Project

Estimation

- Energy demand
- Energy consumption
- Co2 emission



Utilizing AI, Pattern Recognition, and Machine Learning to Estimate Building Parameters from Single image

TRAINING DATASET



1860 - 1918



1949 - 1957



1984 - 1994



2010 - 2015

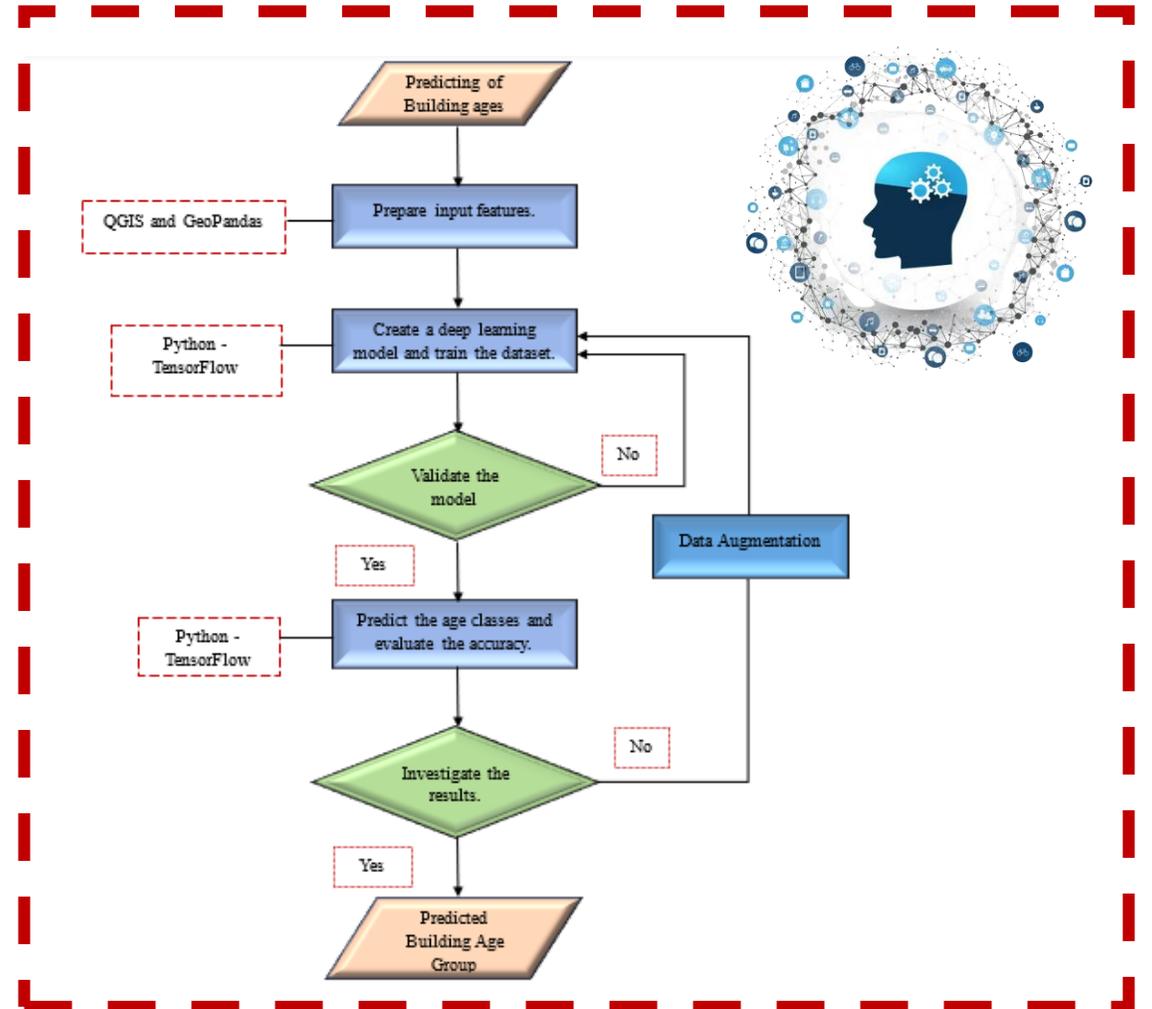


1969 - 1978



Utilizing AI, Pattern Recognition, and Machine Learning to Estimate Building Parameters from Single image

TRAINING DATASET





Utilizing AI, Pattern Recognition, and Machine Learning to Estimate Building Parameters from Single image

TRAINING DATASET



Expected output



- Building age
- Windows
- Doors

Enhancing Map Creation in QGIS Software with AI and Voice Recognition Technology

Machine learning, a subset of artificial intelligence, refers to systems that can learn by itself moreover teaches a computer to identify patterns, not programming with specific rules.

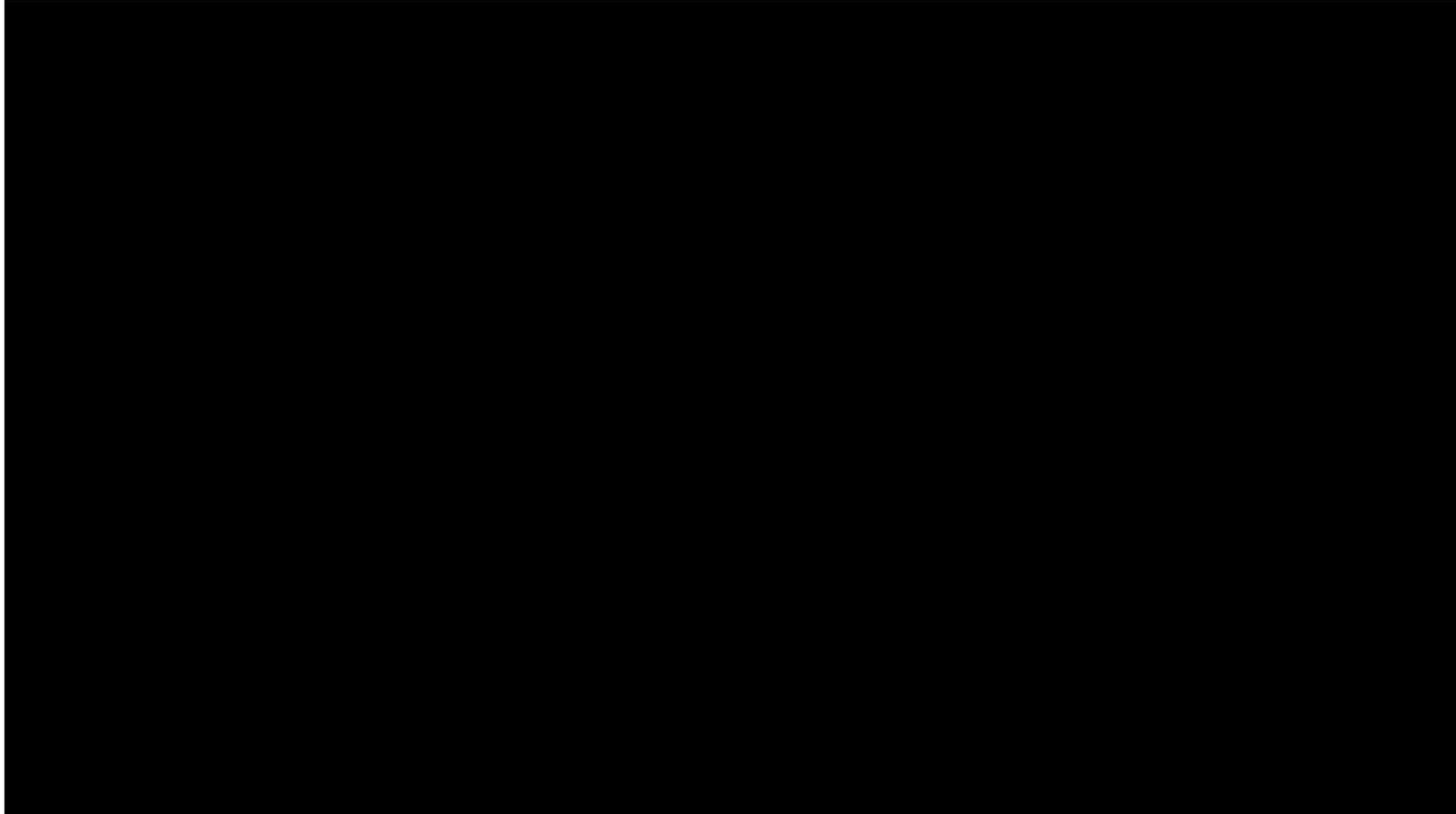
Traditional method of object identification by coding is being replaced by **voice recognition assistive technology**.

Enables **Enhanced** **Accessibility,**
Increased **Speed,** **Multitasking**
Capability, Task Automation etc.





Enhancing Map Creation in QGIS Software with AI and Voice Recognition Technology



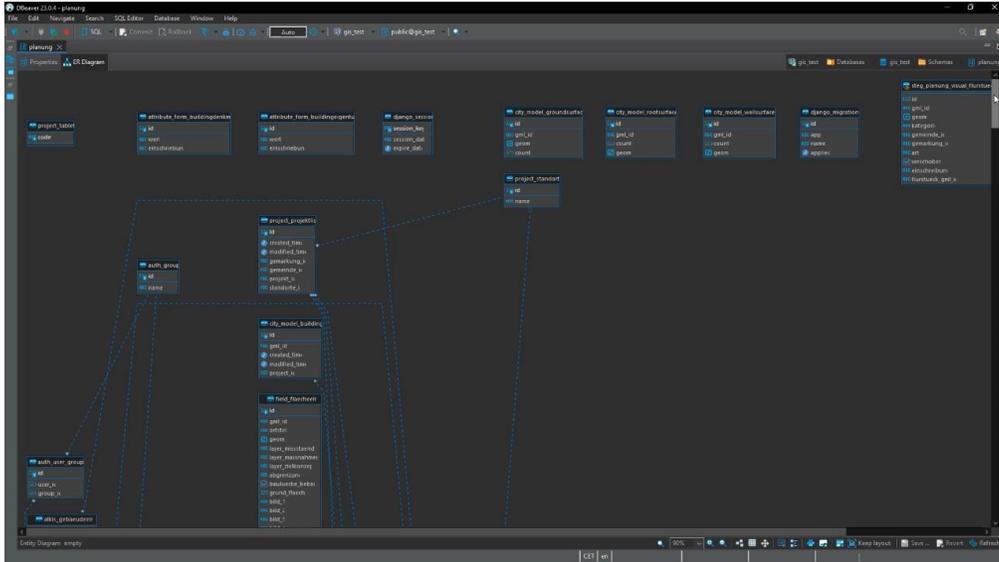


Optimizing photovoltaic panel placement through ai-assisted site selection

- ❑ Laser scanner data/point cloud data/cityGML data to find out the best place and direction installing photovoltaic panel on the roof of the building or open area.
- ❑ Using orthophoto and pattern recognition to find out whether photovoltaic panel is installed on the roof of the building or not.
- ❑ After finiding the best location of pv-panels with the usage of spatial data analysis, result will be visualized in the Cesium.



Optimizing photovoltaic panel placement through ai-assisted site selection



```
00 step
create new table on step_housecoordinates and insert .txt housecoordinate data to that.
...
from psycopg2 import connect
from psycopg2.extras import DictCursor
from local_setting import DB_HELPER, PROJECT_INFO, SKID
import re

def database_connector(database_info_dic):
    """
    create postgres database connection using psycopg2 library
    """
    connection = connect(
        host=database_info_dic['HOST'],
        port=database_info_dic['PORT'],
        dbname=database_info_dic['NAME'],
        user=database_info_dic['USER'],
        password=database_info_dic['PASS'])
    return connection

if __name__ == '__main__':
    schema_name = 'PROJECT_INFOT' + name
```

Relational Tables

Python Scripts

```
class Migration:
    def __init__(self):
        return self.flurlstack_get

class Database(models.Model):
    """
    Building model
    """
    get_id = models.CharField(max_length=20, verbose_name=_('ID'), unique=True)
    flurlstack_get = models.ForeignKey(
        flurlstack, related_name='database CASCADE', verbose_name=_('flurlstacks_building'), unique=True,
        on_delete=models.CASCADE)
    verbose_name=_('Land parcel get id')

    get_building = models.ForeignKey(
        building, related_name='get_building', on_delete=models.CASCADE)
    verbose_name=_('get_building')

    geom = models.PolygonField(srid=25832, verbose_name=_('Geometry'))
    number = models.CharField(max_length=20, unique=True, null=True, verbose_name=_('House number'))
    address = models.CharField(max_length=255, unique=True, null=True, verbose_name=_('address'))
    get = models.CharField(max_length=255, unique=True, null=True, verbose_name=_('Type'))
    grund_flasche = models.DecimalField(max_digits=12, decimal_places=2, unique=True, null=True, verbose_name=_('Area'))

class Meta:
    """
    add extra info for building class
    """
    verbose_name = _('Building')
    verbose_name_plural = _('Buildings')

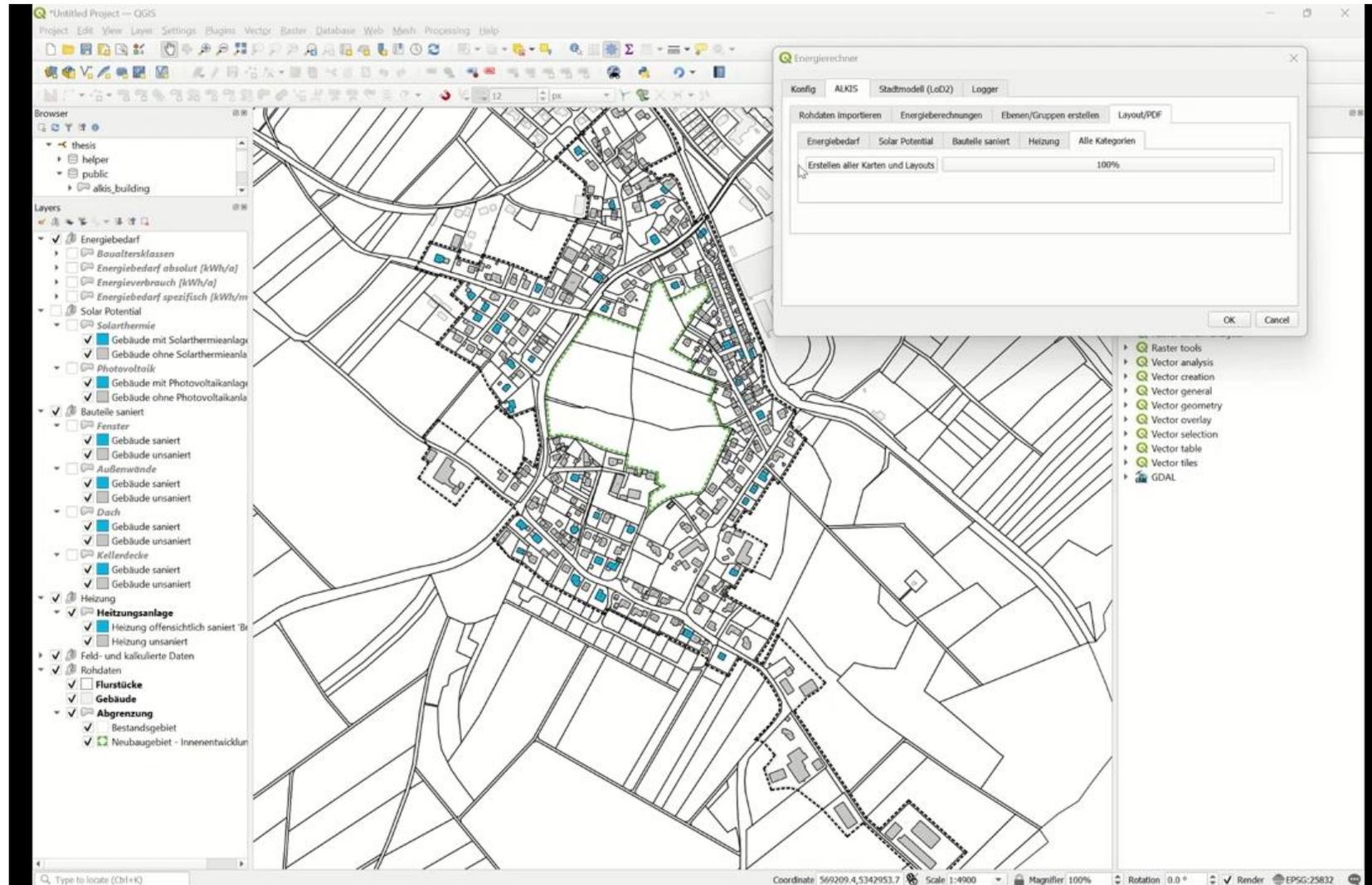
    def __str__(self):
        return self.address

class Migration(models.Model):
```

Django Panel Admin



Optimizing photovoltaic panel placement through ai-assisted site selection



Thank you