



eGuide

Three steps to

monetizing GeoAI



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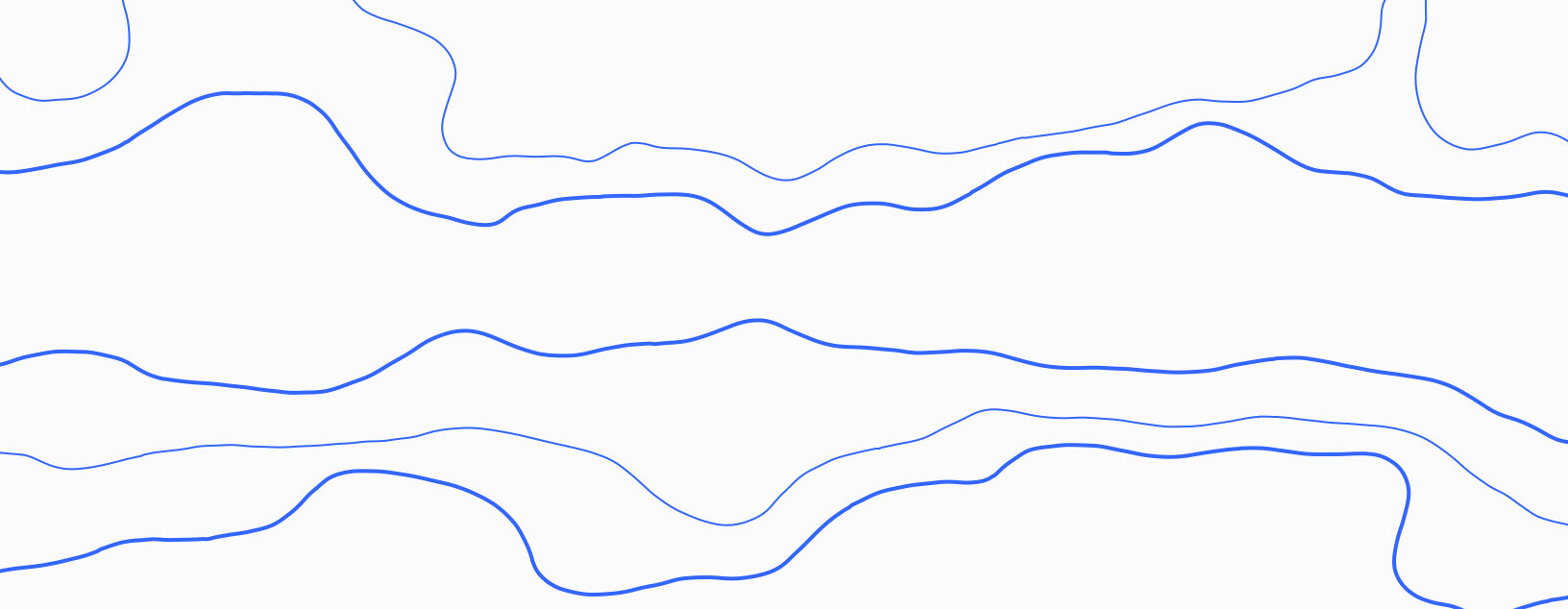
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Getting started

Introduction

Once the preserve of public-sector organizations, many commercial sectors are now embracing geospatial applications for a wide range of use cases, including civil engineering, financial services, logistics, telecommunications, and many more. Over 80% of enterprises already employ location data as part of their data strategy and plan to enhance it with context & time series i.e., geospatial imagery. With the world generating over 200TB of Earth Observation (EO) imagery on a daily basis, this source of ground truth will enable every company in the world to become a geospatial driven business within the next decade.

The key to 'geo-enabling' companies and boosting geospatial mass adoption is moving away from complex, inefficient, and expensive workflows and making fundamental changes in machine learning practices. This is where GeoAI, and platforms such as [Picterra](#), can play a crucial role, enabling companies to train, deploy, and manage geospatial models faster than ever before.

In this guide we present the three steps on the journey to monetizing GeoAI, ensuring geospatial companies can deliver cutting-edge business applications and services to end clients quickly and efficiently.

Join us on the journey from **operationalizing to productionizing to monetizing GeoAI** and **unlocking a gigantic opportunity**, not seen since the introduction of GPS.



Pierrick Poulenas

CEO & Co-Founder,
Picterra

Why GeoAI matters



GeoAI platforms systemize the process of building and training experimental machine learning models as well as translating them into production.

This workflow efficiency empowers teams working with massive datasets, and allows organizations to leverage data analytics for decision-making as well as building better customer experiences.

Teams can create a reliable and scalable system to operate geospatial ML models in production AND continuously

develop them. In addition to standardizing, optimizing, and automating processes, GeoAI eliminates rework and ensures that each team member focuses on what they do best.

Still, building in-house cloud deployment is extremely expensive and resource-intensive. The overhead is further amplified every time datasets change, the



derived data and models change, or experiments need to be repeated to achieve the required accuracy. It's only by making sure that the whole environment across an organization is optimized for GeoAI that you begin to see big changes on a day-to-day basis and, eventually, on your P&L's bottom line.

By implementing best practices with GeoAI, you advocate in favor of monitoring, quality assurance and automation, ensuring systems are set up properly for the continued improvement and accuracy of data. Ultimately, it's about making sure your business is equipped to deliver high-quality models at a speed that matches the rising demand for geospatial intelligence. The traditional ML methodology won't get you there, but GeoAI will.



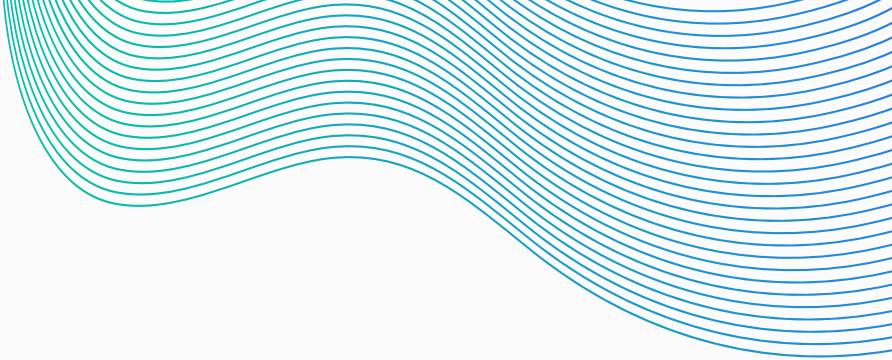
Section one

Operationalizing

Geospatial machine learning has seen tremendous advancement, but its practical application has been constrained by difficulties with operationalizing reliable solutions. Sourcing satellite imagery in real-world settings, handling huge volumes of training data, and managing legacy machine learning systems are just a few of

the challenges that have severely restricted downstream innovation.

It's no secret that working with imagery is resource-intensive. Information gathering is usually manual and slow, coming from varied sources such as surveys and sensors, and often spread over vast geographic areas.



On top of data access complexity comes the performance issues of working with large geospatial images, image quality, and data representation.

Data then needs to be organized and labeled before its value can be realized. Turning data into something that can be analyzed is necessary in order to find useful patterns to inform operational or strategic decisions. However this takes time, which means when the task is finally complete, there's a risk the data is already out of date and opportunities could be lost. In short, navigating a constantly changing environment in order to provide the most accurate picture of the current landscape demands an agile and intelligent solution.

Cross-collaboration with IT teams to build and train geospatial models is also a challenge, creating a barrier to productivity. Acquiring data, extracting features, and transforming data to meet specific business needs requires expensive teams of skilled data scientists. Considerable time, money, and resource go into developing and training geospatial models, which means less time is spent on higher-value, strategic work.

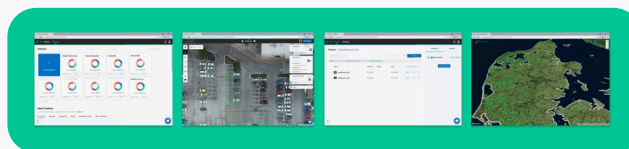


Organize data	Label data	Develop Model	Train model	Deploy to production	Prod QA/QC	Model Maintenance	Results visualization	Scaling to new type of objects
1 week	4 weeks	4 weeks	2 weeks	8 weeks	2 weeks	1 week	1 day	3 weeks
Data scientist GIS associate	Data scientist Annotator	Data scientist	Data scientist	Software engineer Developer engineer	Data scientist GIS associate	Data scientist	GIS associate	Data scientist



Using
Picterra
1 week

95%
time saved



Organize data	Label data	Develop model	Train model	Deploy to production	Prod QA/QC	Model maintenance	Results visualization	Scaling to new type of objects
4 hours	8 hours	Automated	1 hour	Automated	40 hours	5 min	5 min	1 day

NO CODING SKILLS REQUIRED + EASILY SCALABLE FROM SINGLE USER TO TEAM COLLABORATION

However, all is not lost. GeoAI empowers GIS professionals and data science teams with a powerful framework for managing image sourcing, dataset and model development, large-scale training, and model deployment. It offers an integrated solution by effectively simplifying and democratizing access to insights locked behind phenomenal volumes of imagery.

At its core, GeoAI is a set of guidelines and automation

capabilities within an ML pipeline that enable various teams to collaborate easily and maximize the value of code. A dramatic increase in efficiency is achieved when all parties know they need to exchange certain information at given times through standardized channels and processes.

With everything lined up, understood and ready to go, it's time to move the process into production.

Section two

Productionizing

GeoAI typically aims to address six key challenges around productionizing AI applications:



Repeatability



Maintainability



Scalability



Availability



Quality



Consistency

Achieving productivity and speed requires streamlining and automating processes, as well as building reusable assets and components that can be managed closely for quality and risk. When significant model drift is detected, the ability to retrain and redeploy ML models in an automated fashion is crucial, as it ensures engineers spend more time putting components together instead of building everything from scratch.

But even after years of ML investment, many organizations find they aren't moving any faster. As we've already addressed, building models for mission-critical Earth Observation use cases at scale is incredibly challenging. Communication breakdowns, lack of resources, and lengthy lead times are three key reasons why ML projects don't make it into production.

Collaboration is also a challenge. Bringing data scientists, GIS professionals, software engineers, and dev-ops teams together, just to get a model into production, is a time-consuming and high-friction process.

In contrast, a shared platform, managed infrastructure, and integrable architecture results in streamlined pipelines and straightforward integration. This agility reduces the time to value and frees up time to serve more use cases, leading to increased value to the business. Companies implementing GeoAI can speed up model training times, dramatically improve accuracy, and go from an idea to a live solution in just days – without increasing headcount or technical debt.

Automation and performance tracking are the key metrics here.

Once a geospatial model has been created, the final steps in operationalizing are to test and deploy it to a dedicated serving environment. This provides clear demonstration that the model works under real-world conditions and, crucially, can be repeated quickly and consistently with as little turbulence as possible.

With modern GeoAI in place, ML teams have a scalable, reliable way to operate geospatial models in production and continuously develop them. Over time, you'll also collate a library of strategic ML assets that will enable you to act on timely data – fast.

**Now you're up to speed,
it's time to commercialize
your GeoAI investment.**





Section three

Monetizing

By now, most successful organizations employ a data strategy to unlock business value and achieve their digital ambitions. The best in class recognize the strategic importance of using geospatial image analysis to improve operations, get supply chain visibility, and measure targets

with unquestionable data. But that means they first have to master the use of geospatial analytics. And for some organizations, this segue could be transformative.

With the volume and variety of geospatial image data growing, and novel tools making it easier to access, new applications have emerged.

Use cases include infrastructure asset management, insurance risk profiling, land use analysis, and crop management, to name a few.

Businesses are interested in the technology, the outcomes, and the revenue promised by GeoAI. But aside from hiring data scientists, the path to profit and success is rarely straightforward, and predicting ROI is problematic.

As previously discussed, without the right planning and implementation, many ML initiatives are doomed to fail. But projects can also fall short in terms of potential. Businesses may see some value and/or success, but ultimately come to realize that ML isn't working in the way users, and ultimately the business, needs it to.



Higher productivity means data scientists don't need to devote the majority of their time to managing models through their lifecycle, and can instead contribute to high-value tasks such as strategy. And if a company's operations are highly dependent upon machine learning models and its established manual processes for monitoring and checking them, it's likely GeoAI will enable major productivity improvements as well as higher-quality outcomes.

Geospatial data and analytics can also enhance new data-driven offerings, unlocking revenue streams, and identifying opportunities to leverage geospatial technology more fully within an organization.



Monetize your geospatial practice with **Picterra**

Since 2016, **Picterra** has brought together machine learning and geospatial imagery to give enterprises the ability to create scalable geospatial applications and services.

Our industry-leading platform turns a complex, inefficient, and expensive workflow into an all-in-one platform for geospatial analytics. With no programming or deep learning skills required to take advantage of powerful, deep learning models, it couldn't be simpler to train, deploy, and customize models to extract the information you or your clients really care about.

With **Picterra**, you get a reliable and scalable system to operate geospatial ML models in production – and continuously develop them. Our unique collaboration features also support project and team management, allowing ML and operational IT resource to devote more time to higher-value tasks. Our clients span across various industries but all benefit from being able to:



Bring models into production up to 95% faster than before



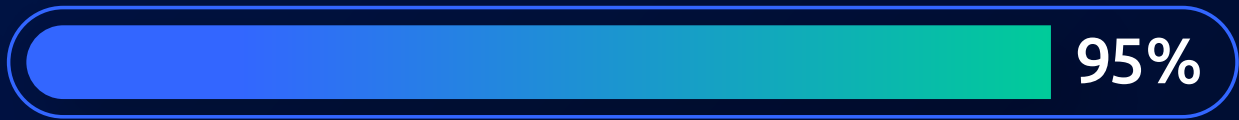
Drive more client value through ML-powered geospatial models



Automate key steps in the model life cycle to free up time for data science and GIS teams

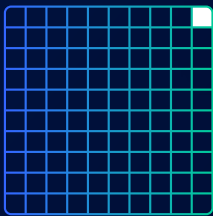
**It's up to
95% faster**

to productionize an ML model with Picterra
than with a traditional ML workflow.

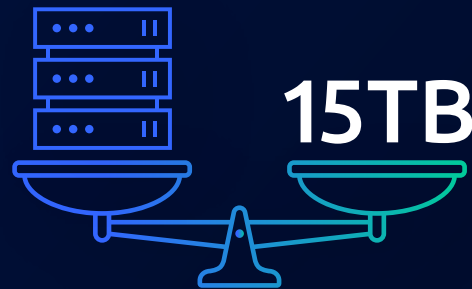


**It's 90% less
expensive**

than traditional
data science
services.



Train your models
**with 99% fewer
annotations**
than similar tools.

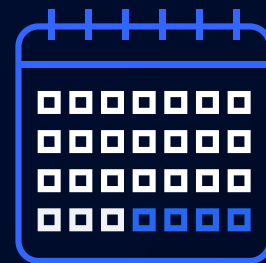


**Leverage 15TB of EO
training imagery**

– one of the largest imagery
and model libraries.



VS



Build a model in **10 minutes vs 3 weeks** of highly specialized work.

It should now be abundantly clear that GeoAI increasingly plays a pivotal role in tackling today's biggest, most complex challenges. The volume and diversity of image data is growing exponentially, the cost of acquiring and analyzing it is declining, and smart applications that create value for businesses and their customers are emerging.

Artificial intelligence and machine learning have amplified organizations' ability to analyze vast quantities of geospatial data and build successful geospatial applications and services.

What are you waiting for?

To find out more about our platform and how to get started with GeoAI, [visit our website](#) or get in touch with a member of our team at hello@picterra.ch



Find out more at

picterra.ch

