Presented at the FIG Working Week 2025,
6-10 April 2025 in Brisbane, Australia

The Geospatial and Earth Observation Industry: Workforce Development

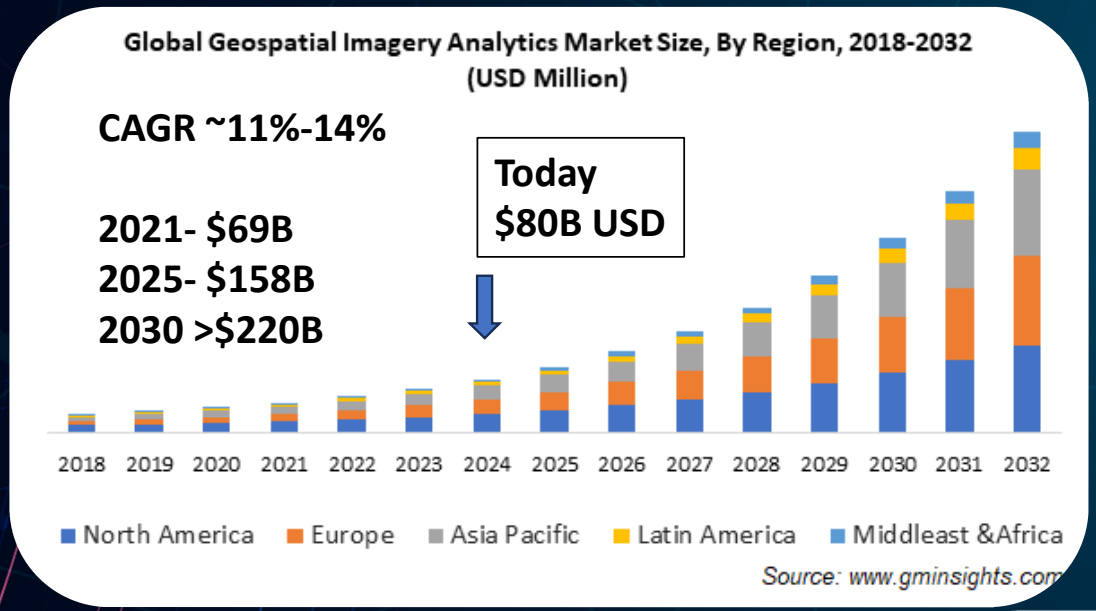
Geospatial in Everything

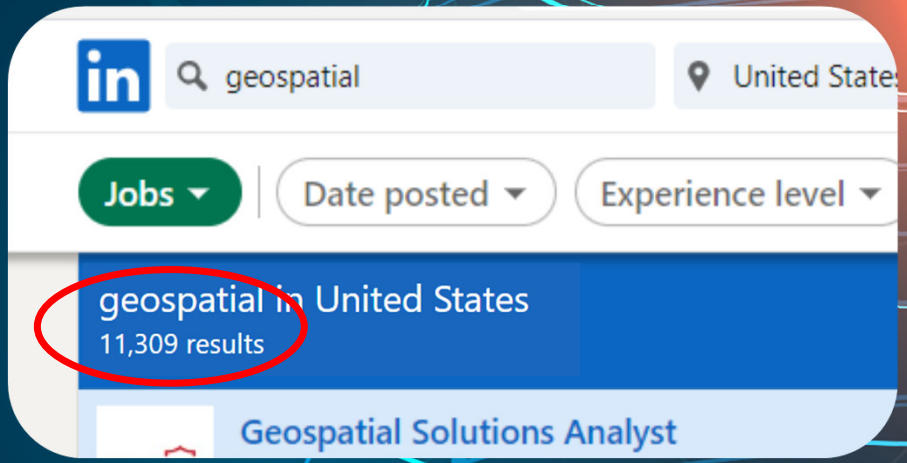
Geospatial for Everyone

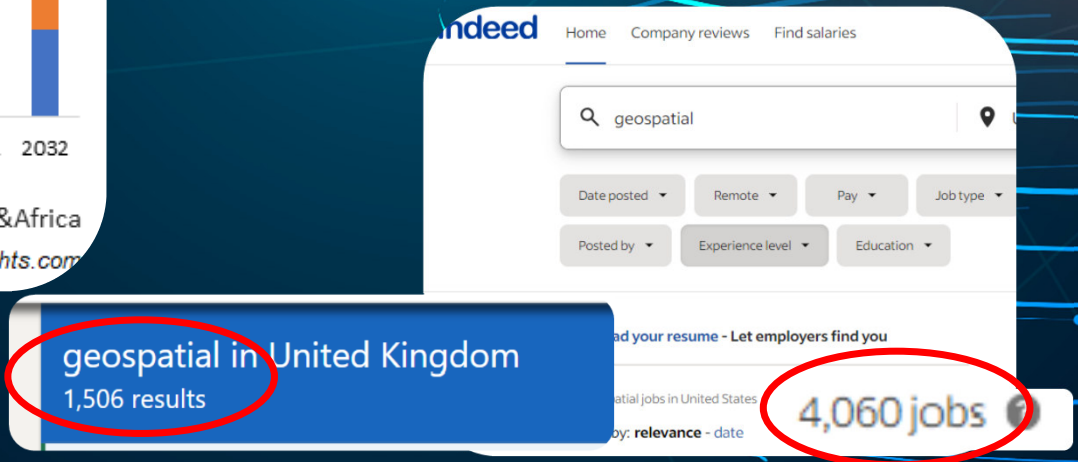
World Geospatial Industry Council

Aaron Addison, Executive Director, WGIC

Industry – What's Going On with growth and workforce?







Defining demand and supply of geospatial workforce

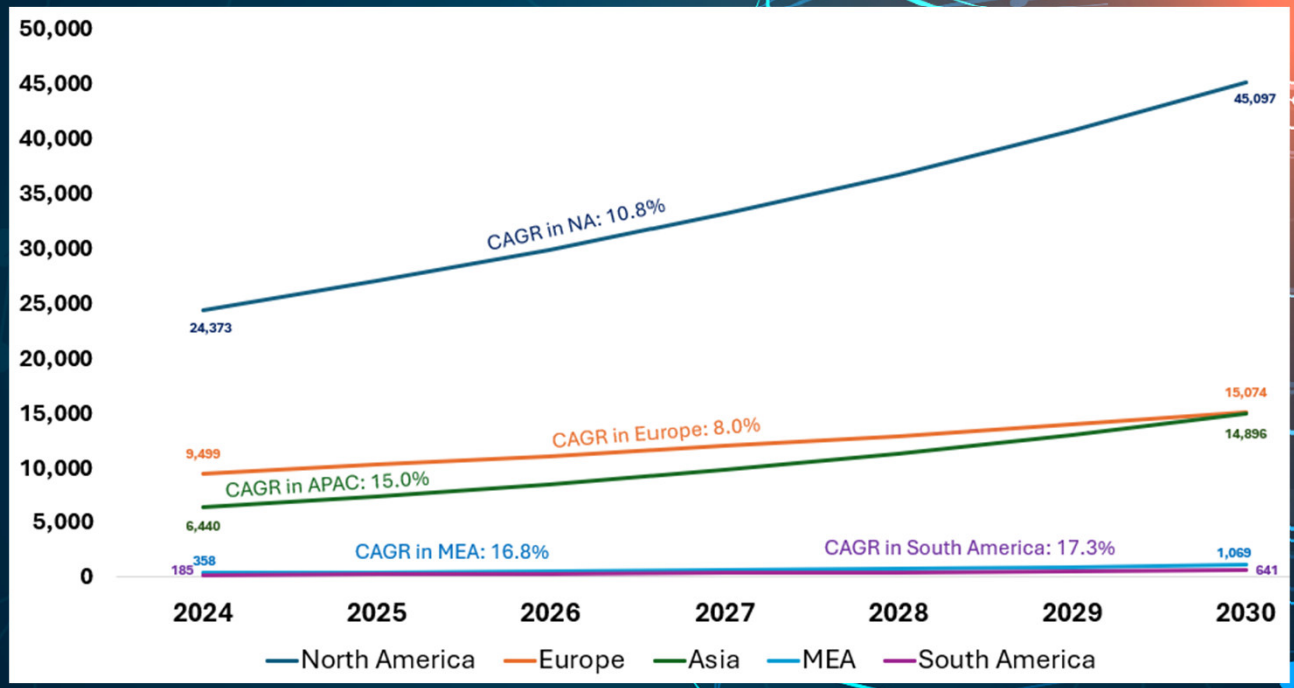
Demand refers to the need for professionals with geospatial knowledge and expertise within various industries and sectors.

Supply refers to the availability of qualified professionals who can meet the demand for geospatial skills.

The demand

By 2030, the total number of geospatial job openings in the APAC region is projected to match the demand in Europe, with a compound annual growth rate (CAGR) of 15% from 2024 to 2030. In comparison, geospatial job openings in Europe are expected to grow by 8% during the same period.

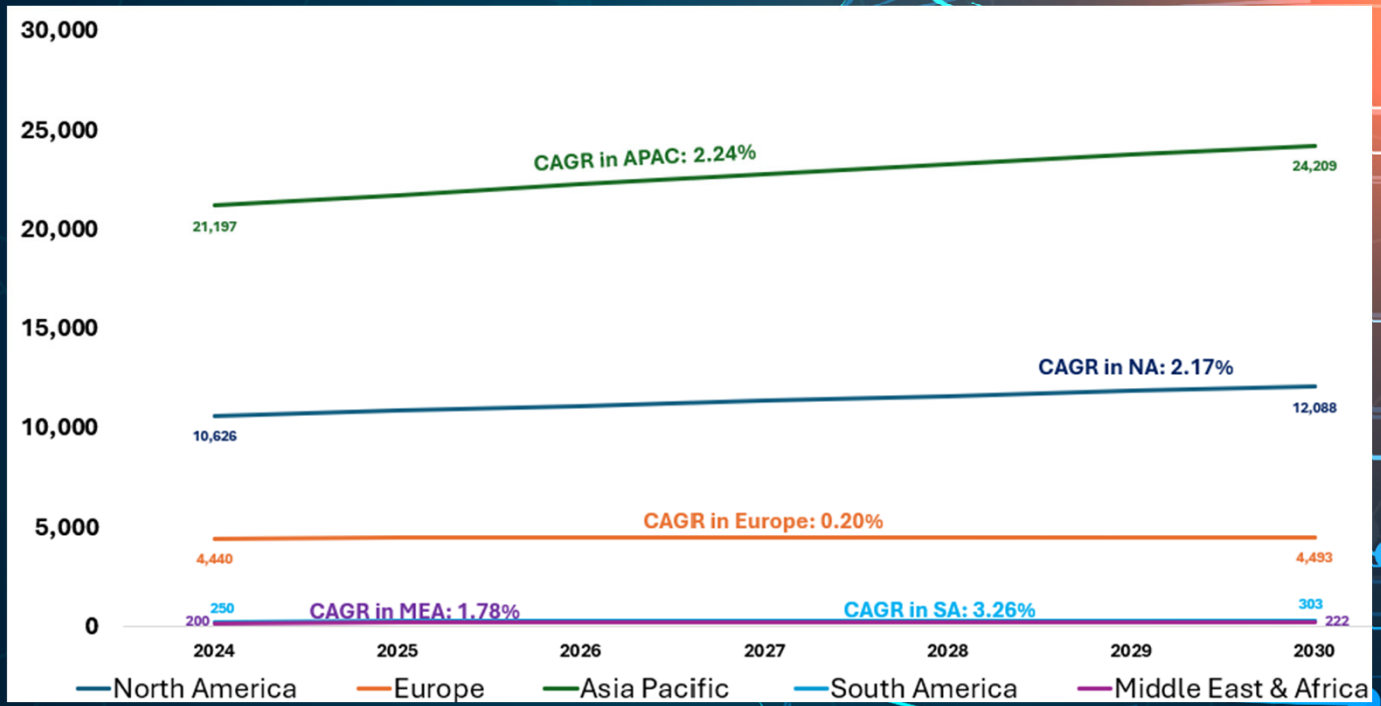
Global Geospatial Job Openings, By Region 2024 - 2030



The Supply

Because of the aging population in Europe, as well as decline in overall STEM & Natural Science graduates, in many countries such as Finland, Poland, Estonia, Russia, Hungary and more, the overall growth rate for geospatial graduates in the region is forecasted to be marginal, & least amongst all regions over the study period.

Global Geospatial Graduates, By Region 2024 - 2030



Conclusions

Demand Growth:

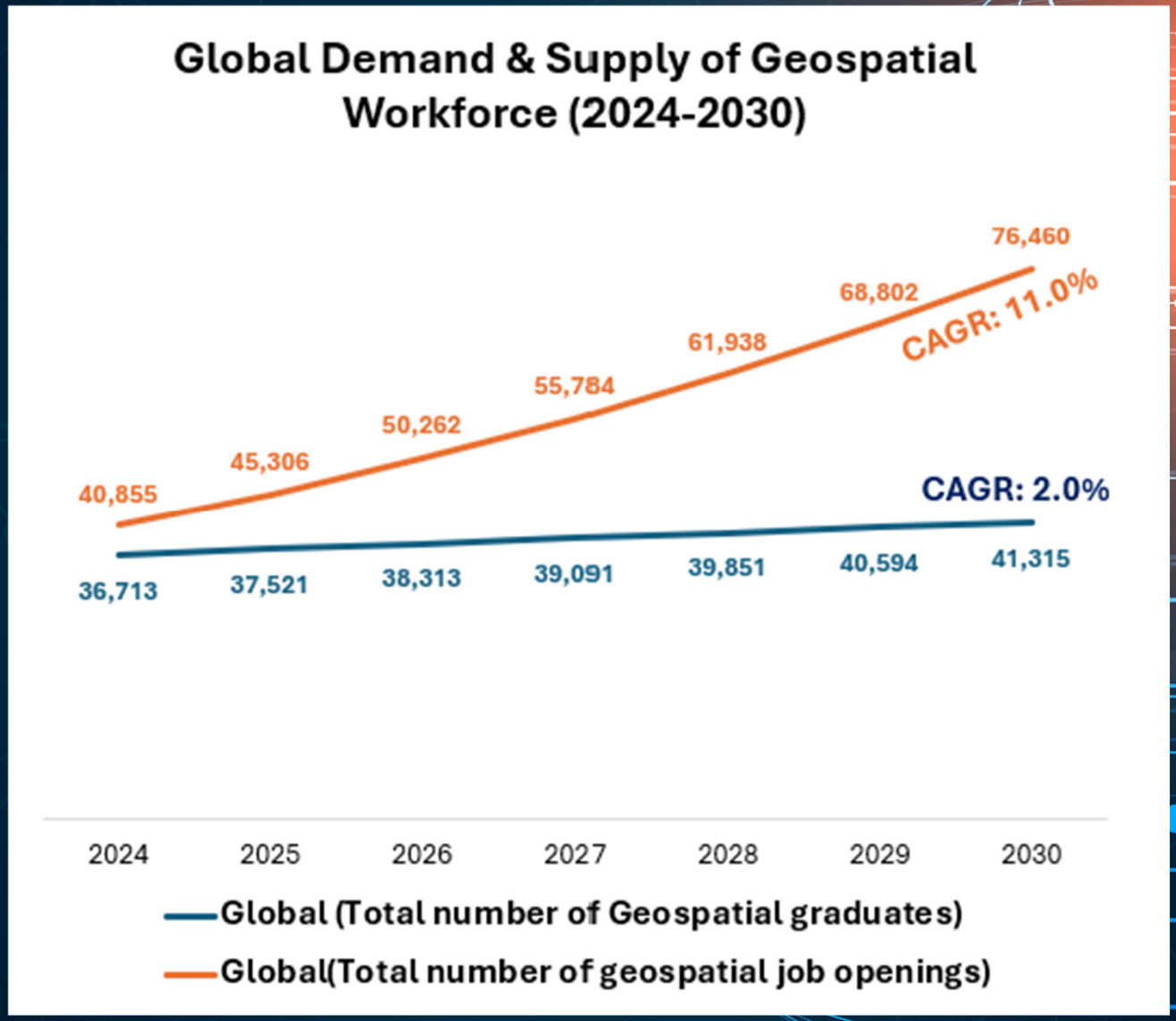
- The demand for geospatial professionals is projected to grow significantly. This growth is driven by the increasing adoption of geospatial technologies across various industries and regions.
- North America and Asia will experience the highest growth rates with Europe likely slowing.

Supply Trends:

- The supply of geospatial graduates is expected to increase, but at a slower rate of CAGR 2%.
- Asia Pacific will continue to produce the largest number of geospatial graduates, followed by North America.

Geospatial Workforce Gap:

- A significant gap exists between the supply of geospatial graduates and the forecast demand for geospatial professionals. This gap is expected to widen over the years, with the demand outpacing the supply by an increasing margin.




Geospatial in Everything
Geospatial for Everyone
Geospatial
"Job" Market
Geospatial & Earth Observation "IN the
Jobs" Market

Expanding Skillsets

Skills highlighted in June 2024 Geospatial & Earth Observation job openings

- Lead Projects
- ETL Tools
- Data management
- Data “wrangling”
- Legal challenges to data
- Enterprise Geospatial skills
- Data Collection + GPS
- Systems thinking
- Problem solving
- QA \ QC skills
- Turning raw data into decisions
- Coordinating with others
- Interdepartmental projects
- Tolerance for ambiguity
- Being a trusted member of a team
- How to operationalize questions
- Communication skills

Letting Go of Tech Speak

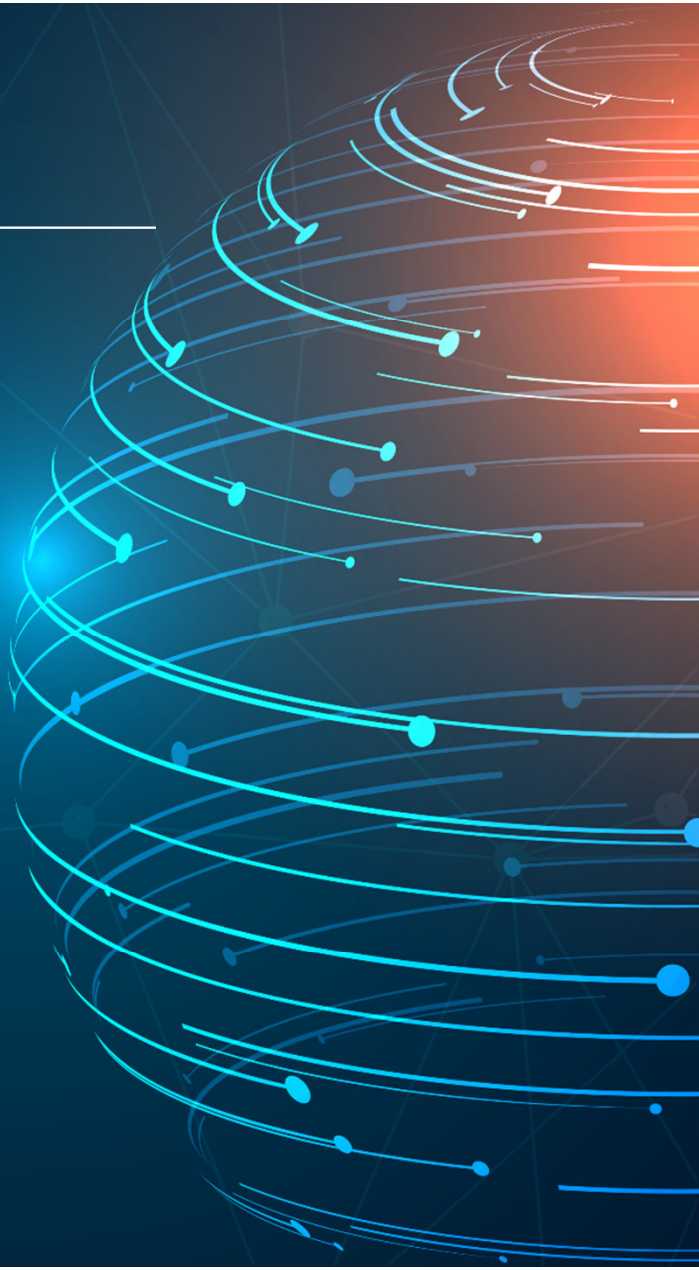
Let me tell you about GEOAI

```
WITH
 origins AS (
 SELECT id, geom FROM yourproject.yourdataset.yourorigins),


 destinations AS (
 SELECT id, geom FROM yourproject.yourdataset.yourdestinations)


SELECT
 origins.id, destinations.id,
 ST_DISTANCE(origins.geom, destinations.geom) AS distance,
 ST_MAKELINE(ST_CENTROID(origins.geom), ST_CENTROID(destinations.geom)) AS geom
FROM
 origins, destination
 QUALIFY ROW_NUMBER( ) OVER (PARTITION BY origins.name ORDER BY distance) <= 1
```

Do I plant my field today?

Final thoughts

- Historically, the Geospatial and Earth Observation industry has leaned towards the specialist.
- The future of the profession may well lean more towards generalists who know the “why” and “what” to work on – not the “how”.
- Frameworks to solve complex problems that do not have easy solutions – not specific tools
  - Climate topics
  - Food security
  - Sustainable infrastructure + digital twins
  - Moving from descriptive to prescriptive models



Thank You

World Geospatial Industry Council

aaron.addison@WGICouncil.org