



# FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:  
Resilient Environment  
and Sustainable  
Resource Management  
for All

Presented at the FIG Working Week 2024,  
19-24 May 2024 in Accra, Ghana

FIG Commission 2 & 7

## WHAT IS GEOMATICS?

### Providing Clarity in the Academic and Professional Context

Prof. Angel Collado, Spain 

FIG YSN Academic/Educational Affairs Officer

Spanish FIG Delegate

Colegio Oficial de Ingeniería Geomática y Topográfica



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## But, who am I?



PROF. ANGEL COLLADO  
*angel.collado@uclm.es*

PhD Candidate in Geomatics Engineering  
(Land Administration) and in Agricultural  
Engineering (Precision Viticulture)  
Teaching and research staff of Geomatics  
Engineering [Youngest Geomatics  
Professor in Spain]  
(Sociological Geomatics &  
Academic/Historical Geomatics)



Awards





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## But, who am I?



PROF. ANGEL COLLADO  
[angel.collado@uclm.es](mailto:angel.collado@uclm.es)

FIG YSN Academic Affairs Officer  
*(FIG Commission 2)*

Social Media Officer of FIG Commission 7  
*(Land Administration)*



Spanish Young  
Representative in APPAT



Spanish FIG Representative (Comm. 2 & 7)  
*Spanish Academic Affairs Officer*





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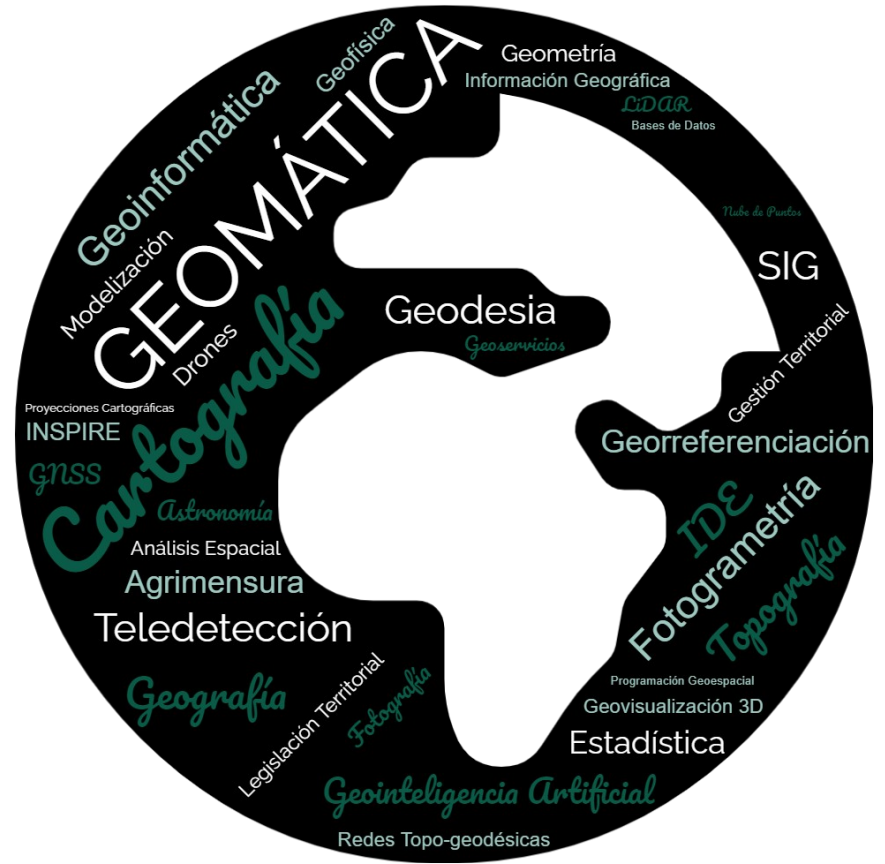
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## What is Geomatics?

“Discipline concerned with the collection, distribution, storage, analysis, processing, presentation of geographic data or geographic information”

ISO/TC 211 Geographic information/Geomatics



Do we all understand this definition?

Does it need to be redefined or completed?

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## What is Geomatics? Academic vs Professional Context

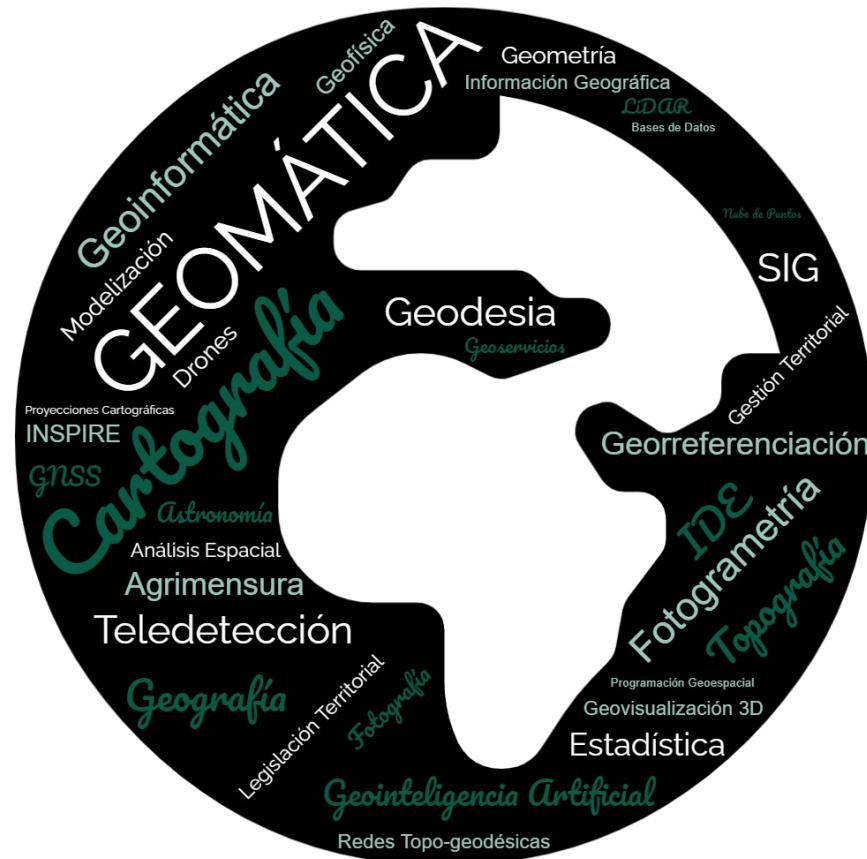
### Academic Context

Do we know what is the core of our studies? What does our discipline consist of?

Techniques vs. Applications.

Do we know which are techniques and which are applications?

Do we know the difference between technical studies, science and engineering?



### Professional Context

What do we mean by a profession?

Has there always been one profession in our field or are there several?

Are we identified by the same name in all countries?

Do all professionals do the same job and perform the same functions?

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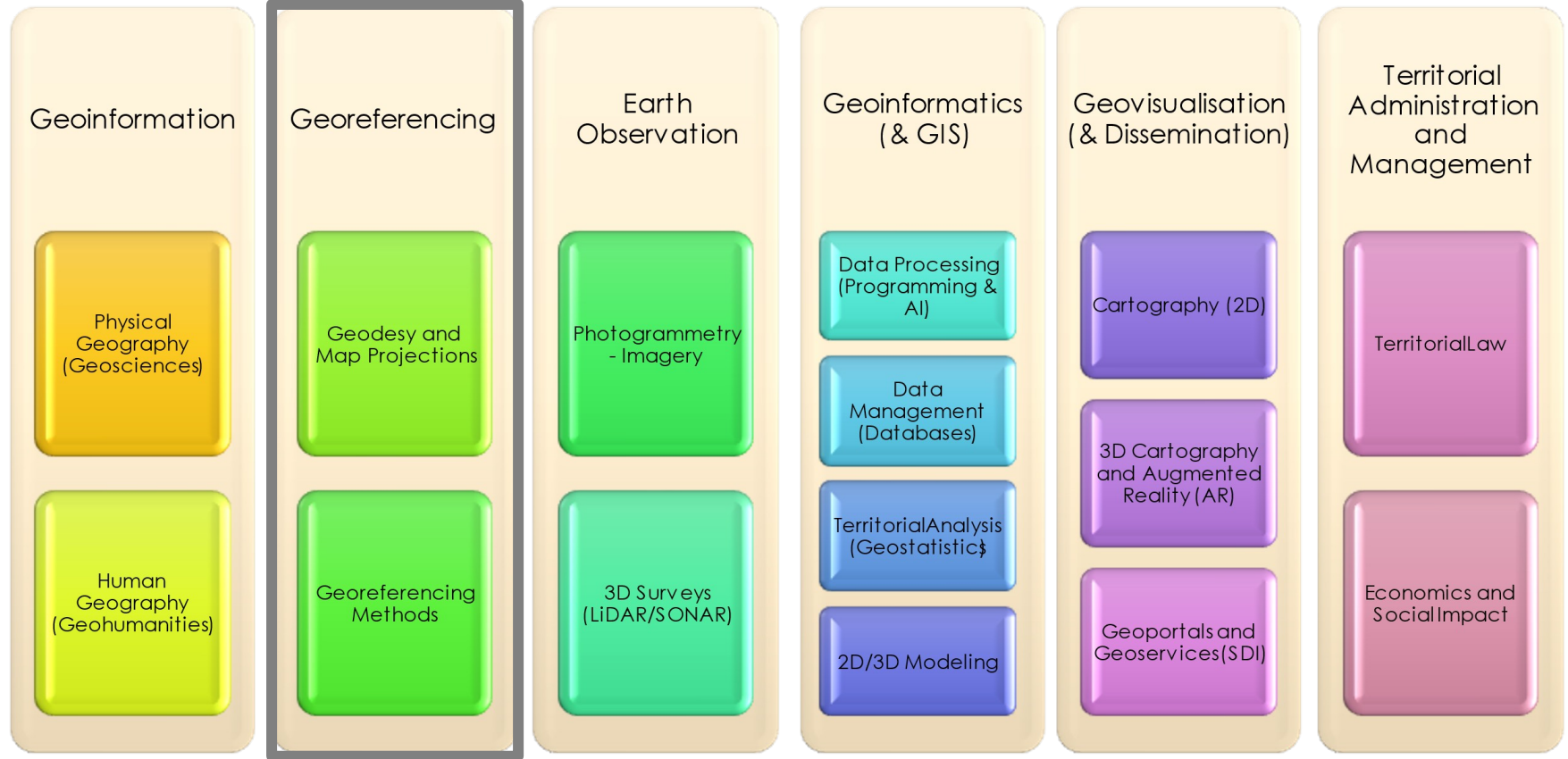
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### Academic Context



Surveying vs. Geodesy

Land Surveying => Surveying => Geospatial Surveying (= Géomètre)

Surveying => Do a survey  
*levantamiento* in Spanish  
*levé* in French  
*rilievo* in Italian



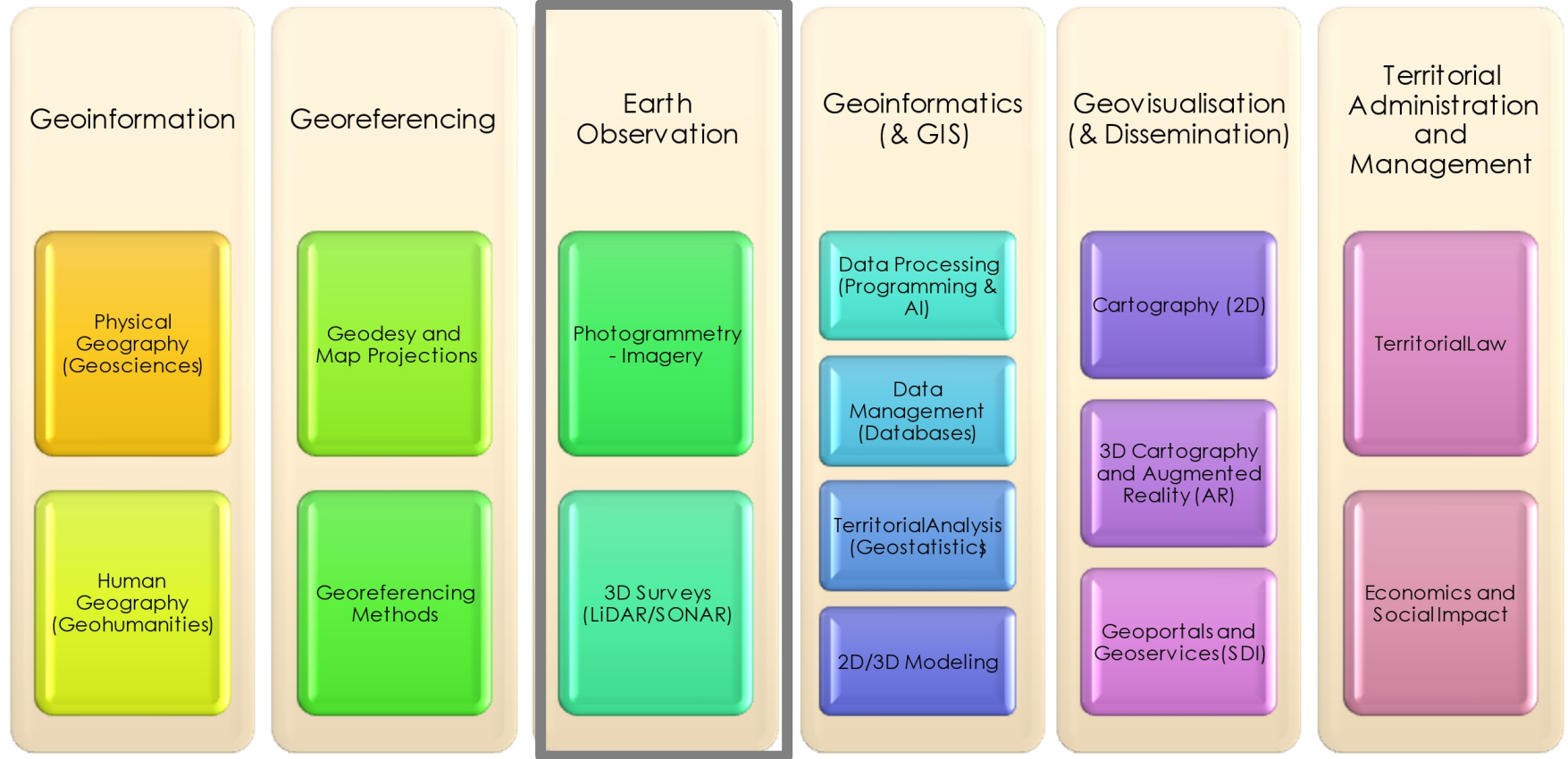
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## Academic Context



Photogrammetry vs. Remote Sensing

Remote Sensing => A technique or physical principles?

LIDAR, SONAR, RADAR...

Photogrammetry = Imagery (Geometry + Radiometry)



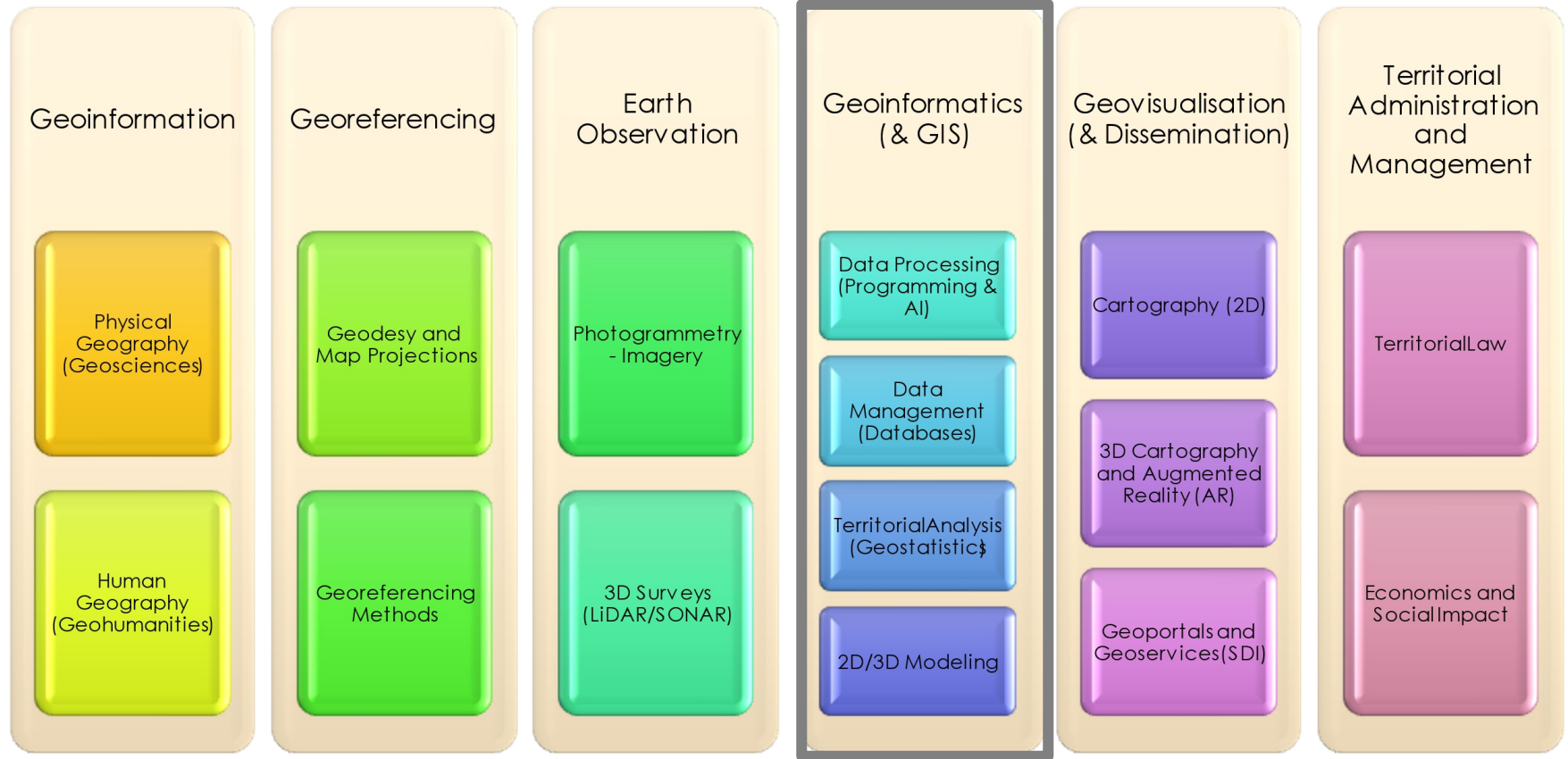
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### Academic Context



GIS vs. Geoinformatics

GIS = Tool (Digital Software)

Geomatics IT IS NOT ONLY Geoinformatics

Geoinformatics = Processing and Analysis of Geoinformation





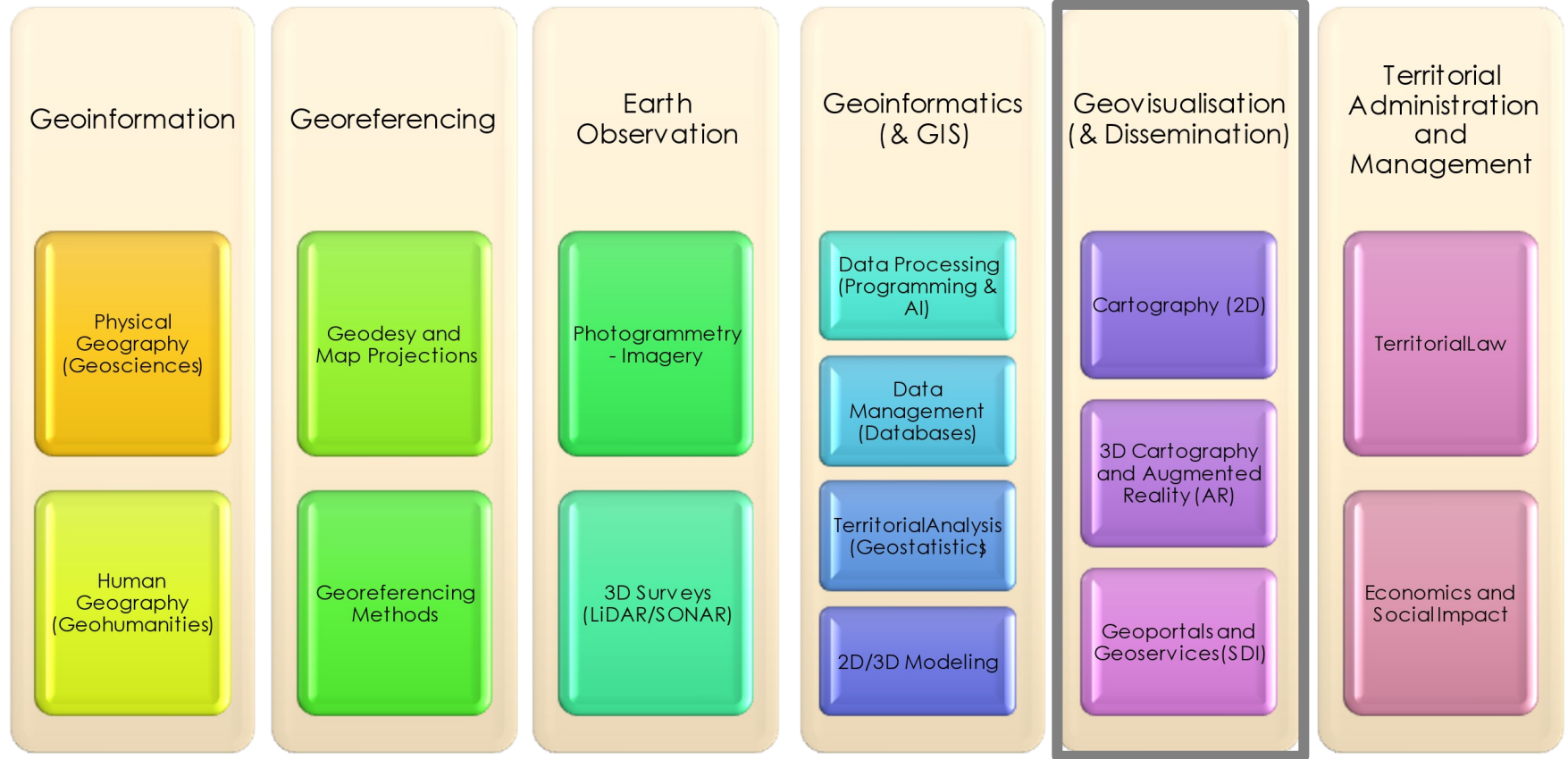
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Cartography => Geovisualisation

3D Cartography is Cartography?

“NEW” Cartography (Geoservices)

Augmented/Virtual Reality



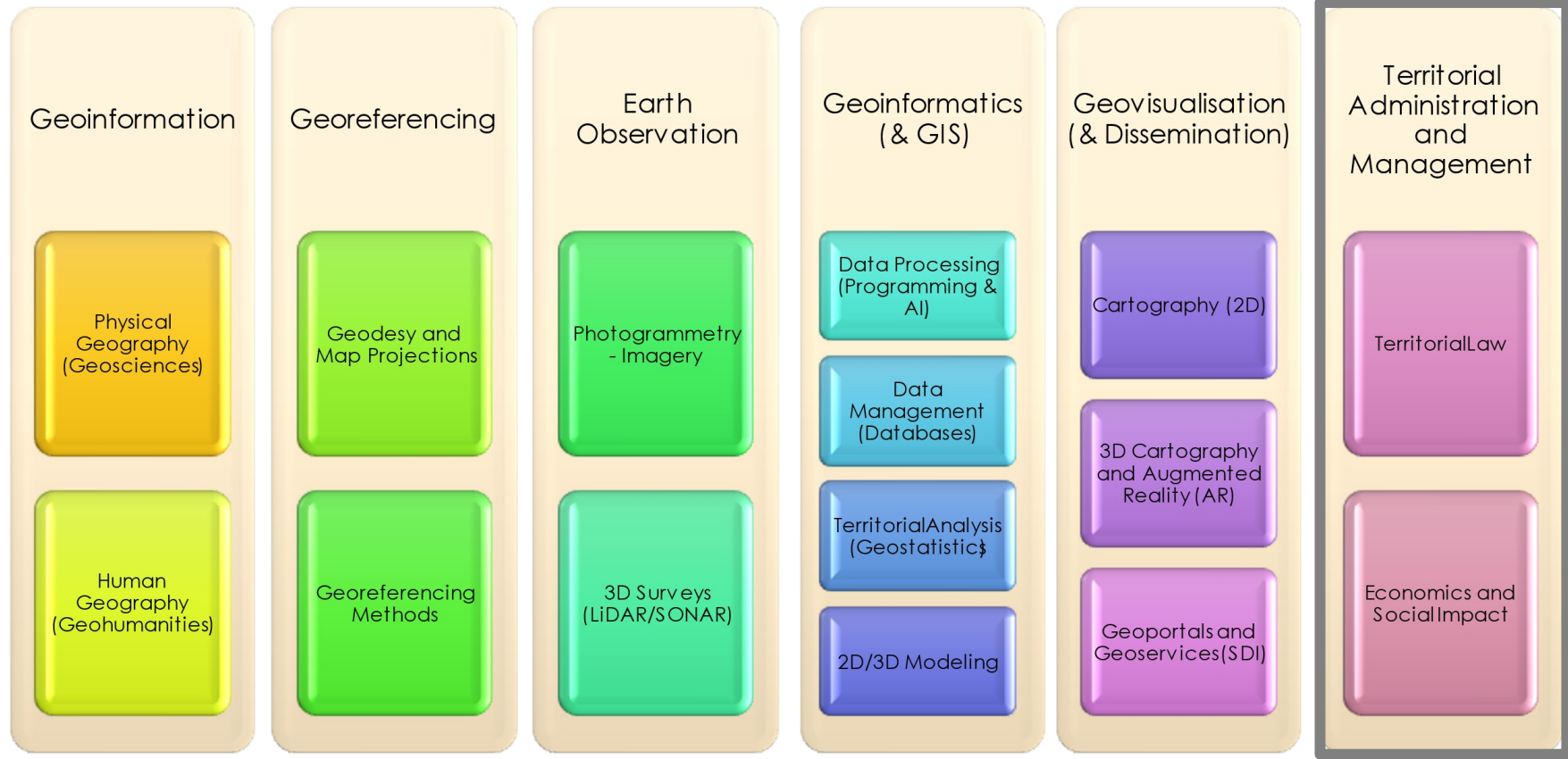
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### Academic Context



Land Administration =>  
Territorial Administration (in Spanish)

Economic + Legal Aspects



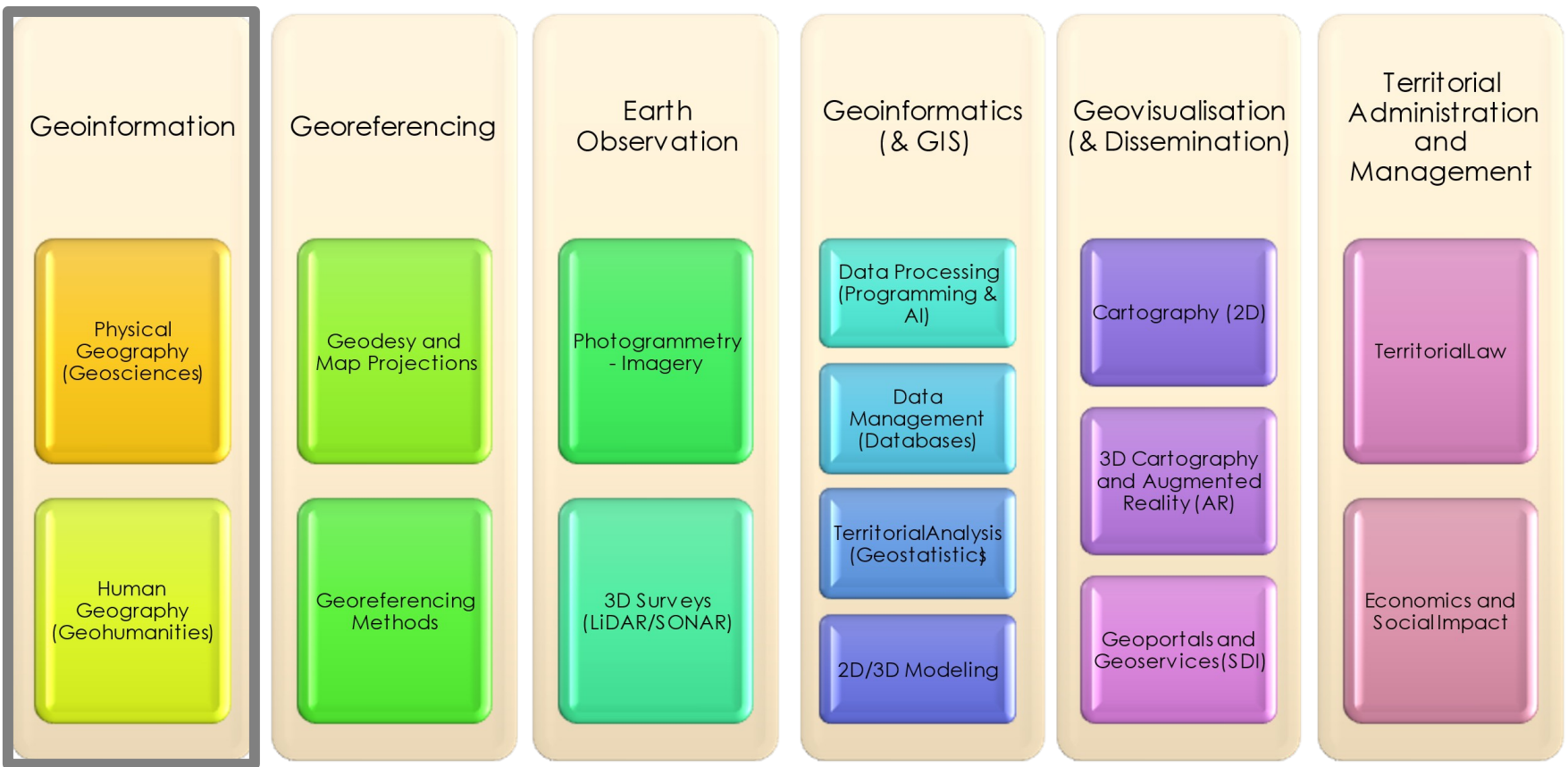
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Geoinformation or Geospatial Information or Geographical Information

Geospatial = Adjective

Geospatial X = GEOGRAPHY

GEOSPATIAL SCIENCE = GEOGRAPHICAL SCIENCE



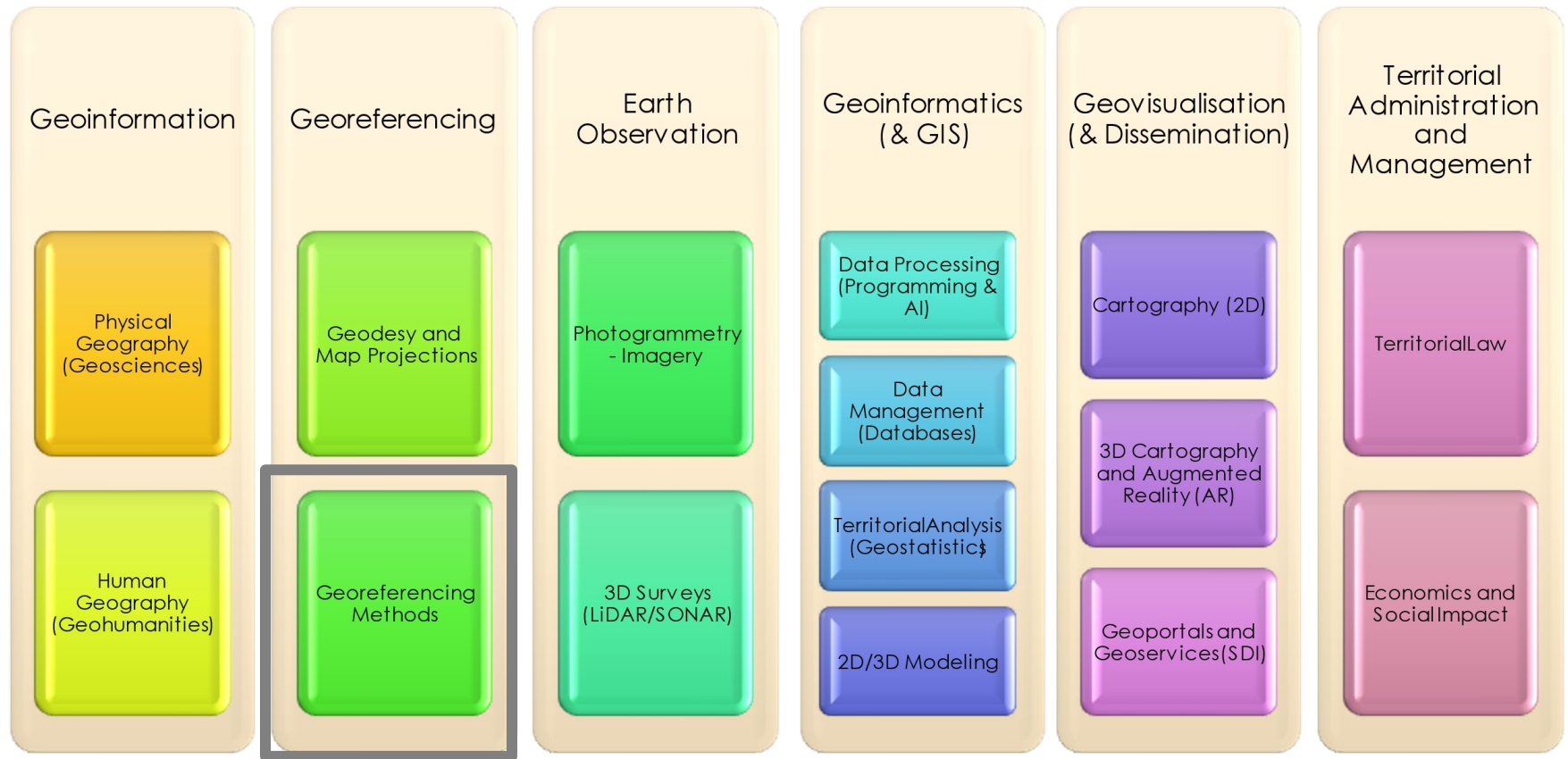
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## Academic Context



LAND SURVEYING  
-  
GEOMETER



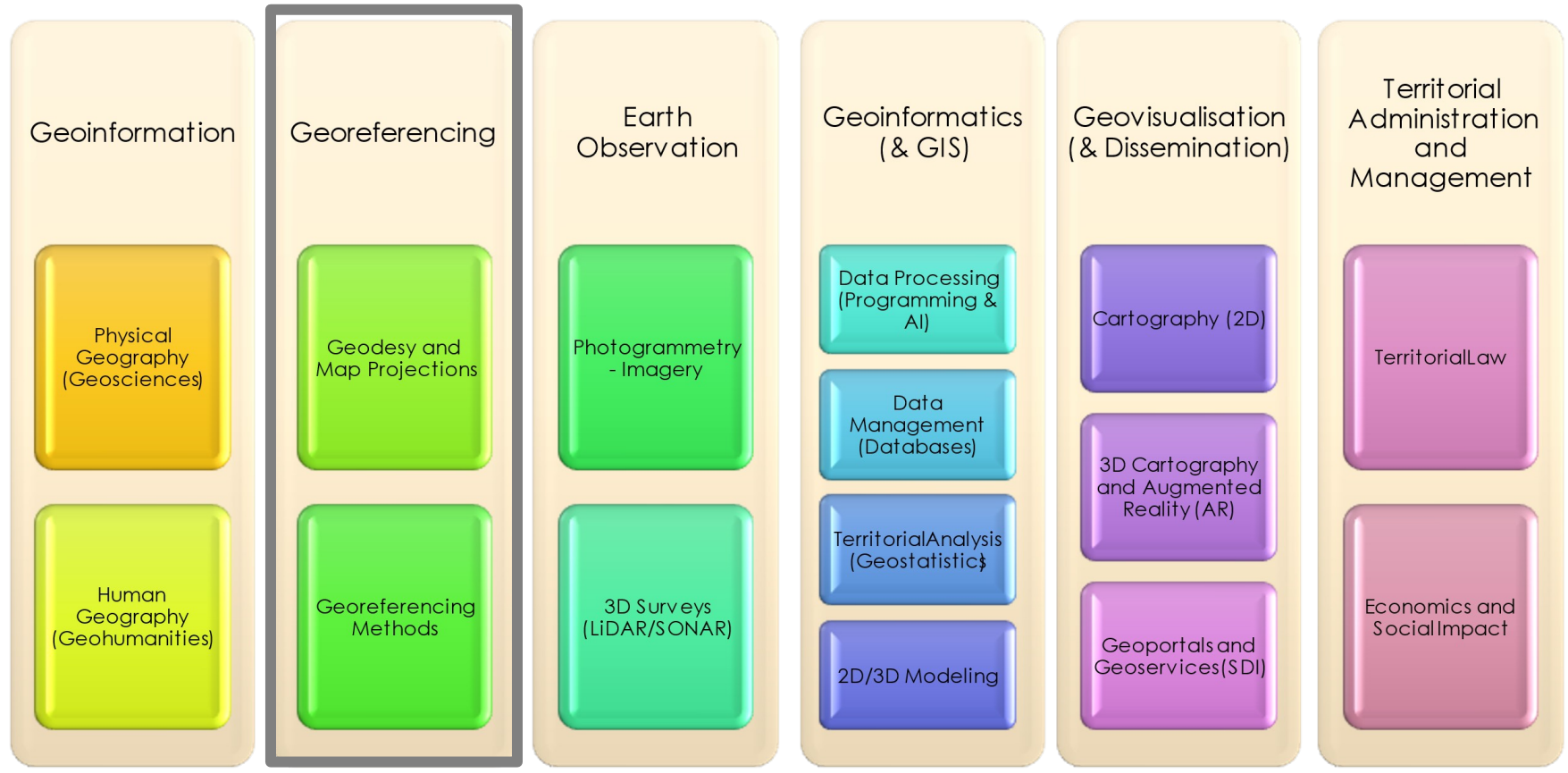
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GEODETTIC ENGINEERING



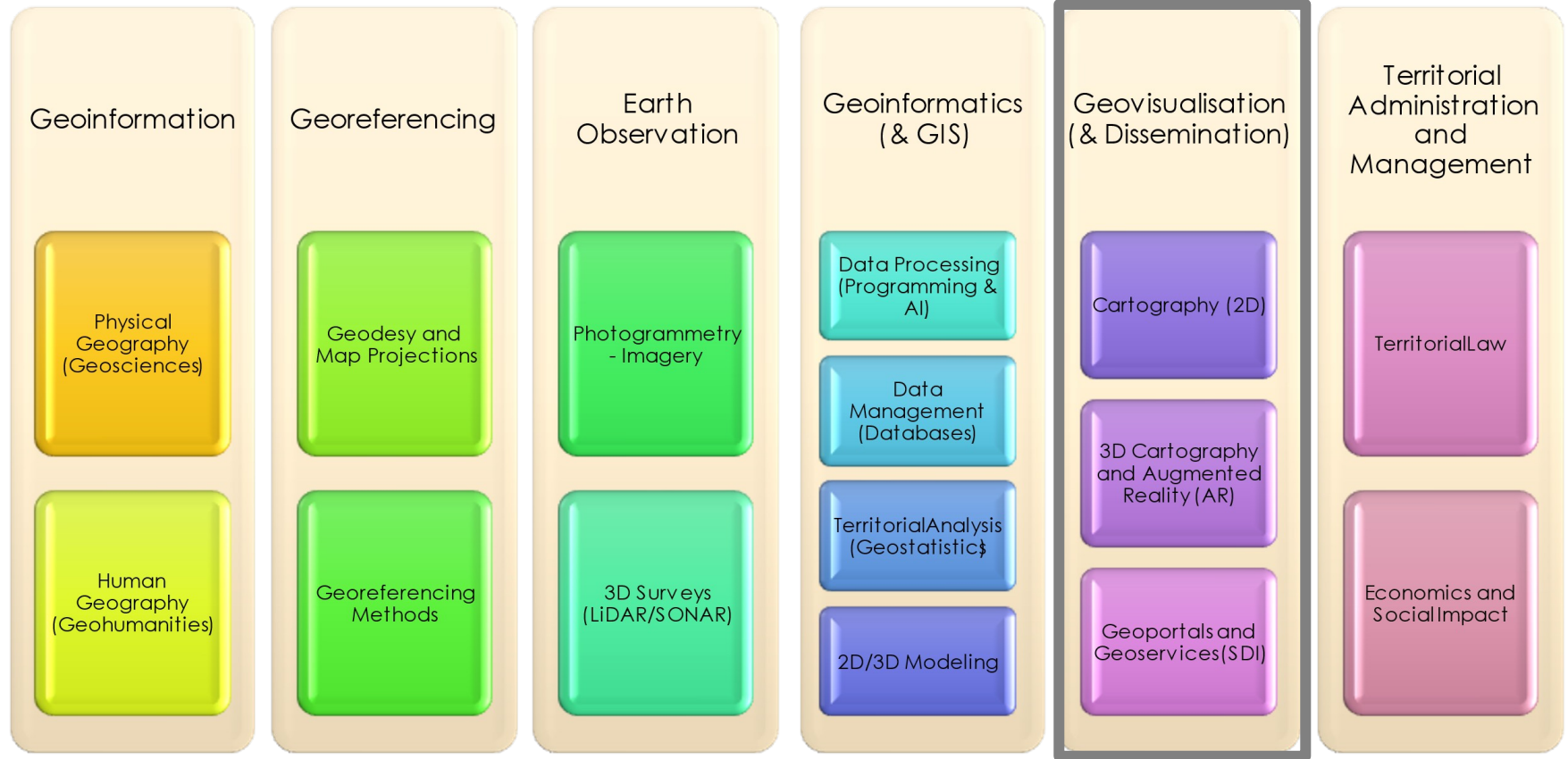
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## CARTOGRAPHIC ENGINEERING



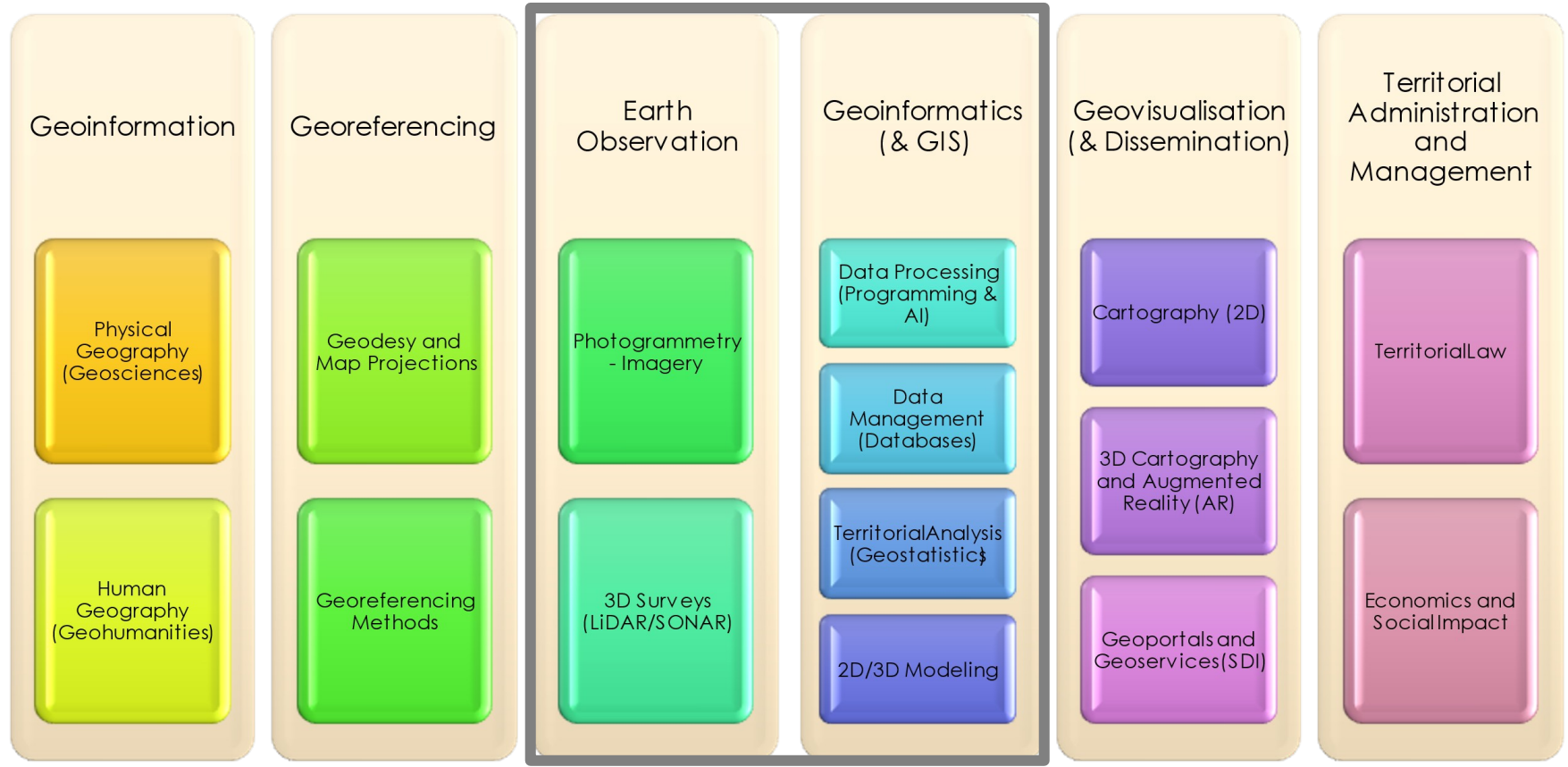
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### REMOTE SENSING & GIScience



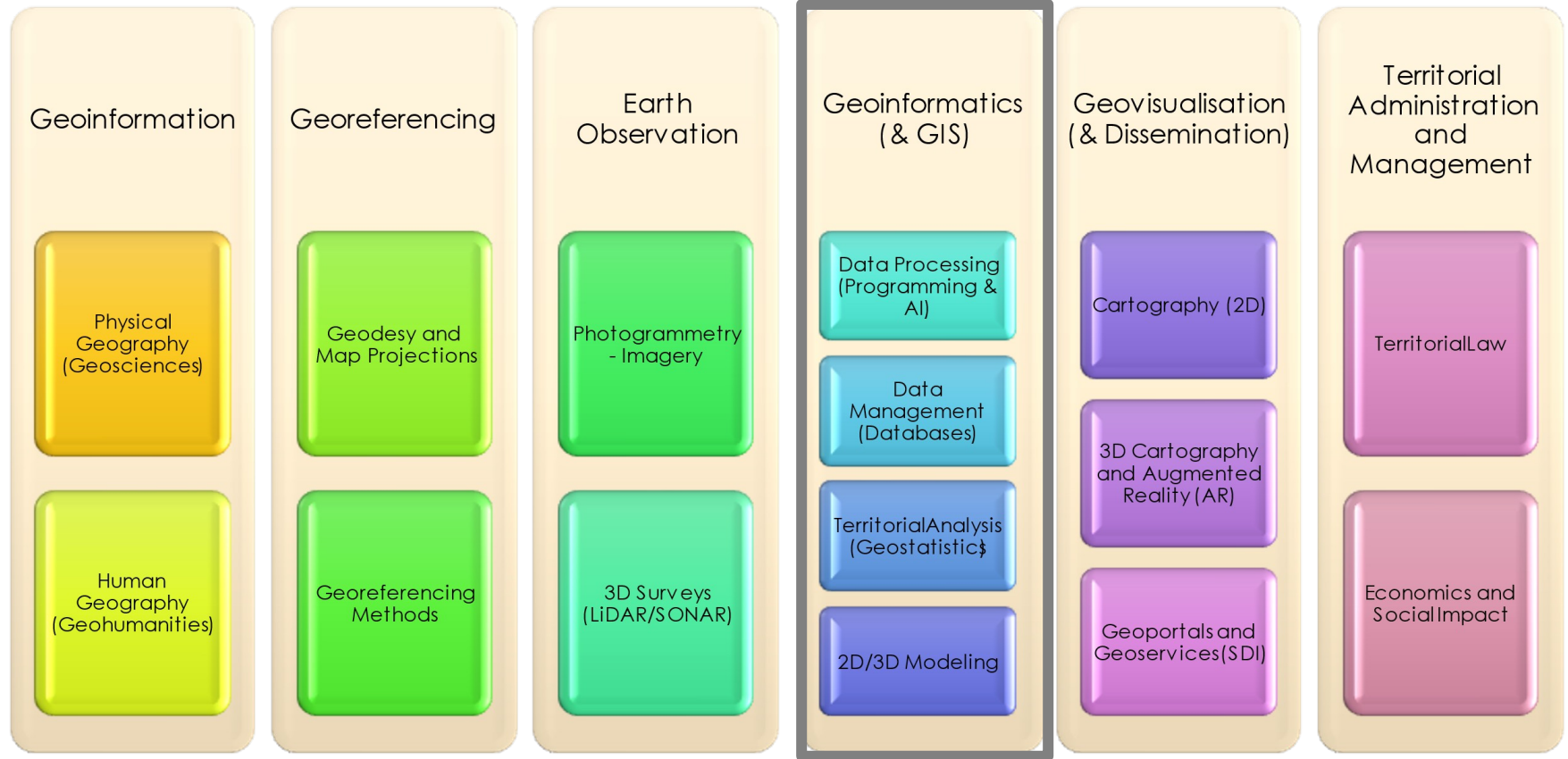
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## Academic Context



GEOINFORMATICS  
-  
GEOSPATIAL ENGINEERING  
-  
GIScience





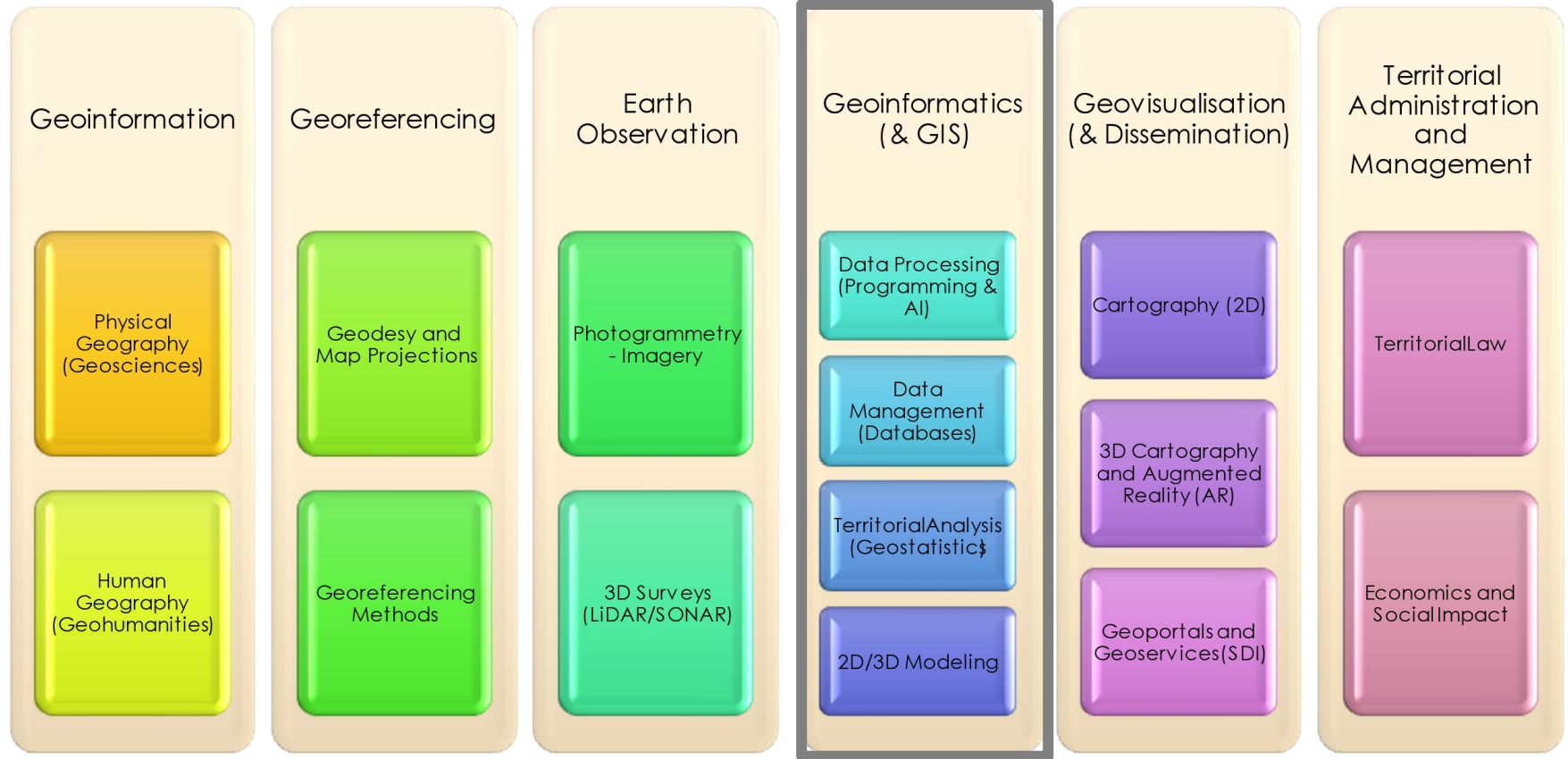
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GEOINFORMATICS  
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GEOSPATIAL ENGINEERING  
-  
GIScience



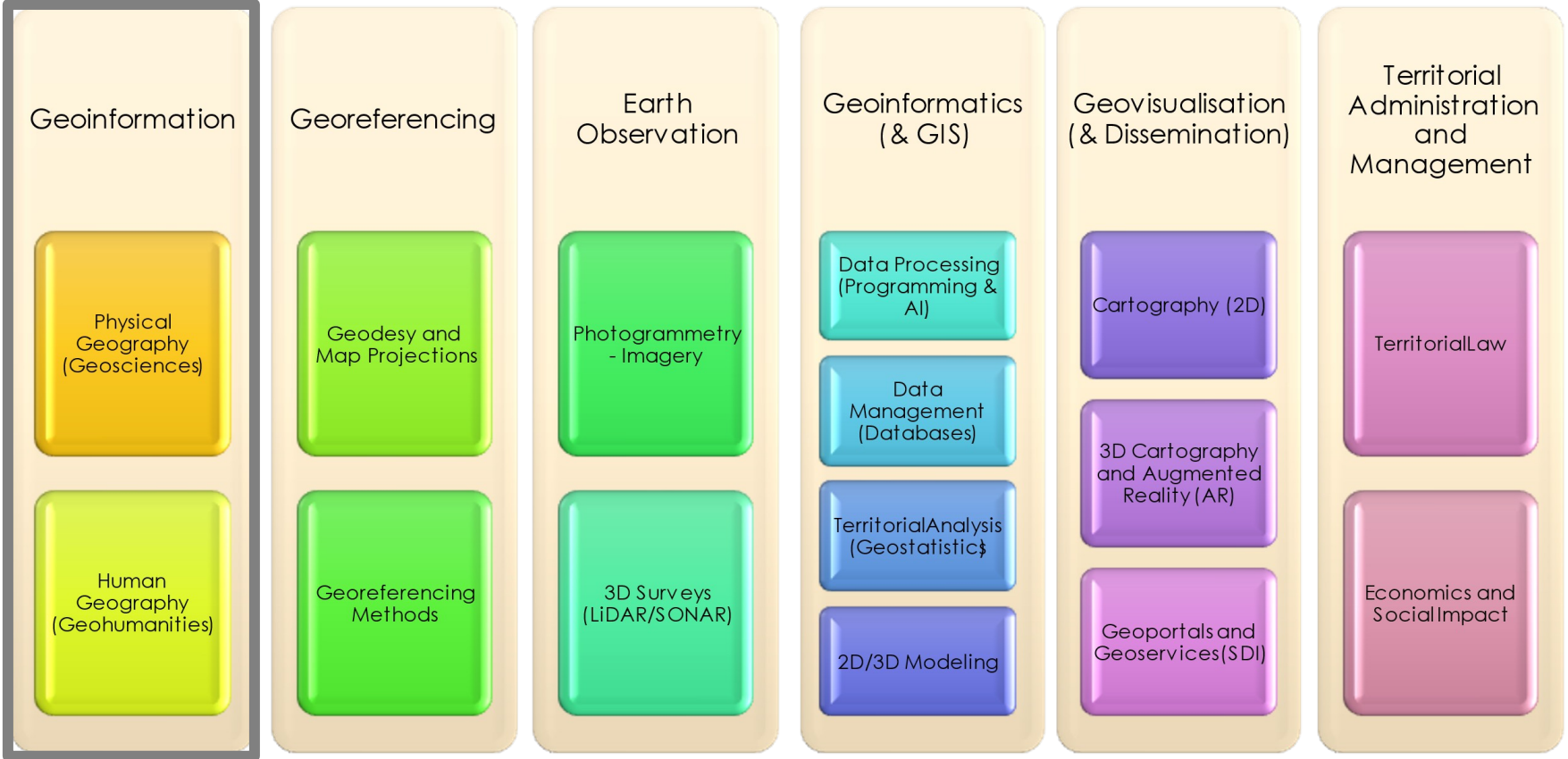
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### Academic Context



## GEOGRAPHY & ENVIRONMENTAL ENGINEERING



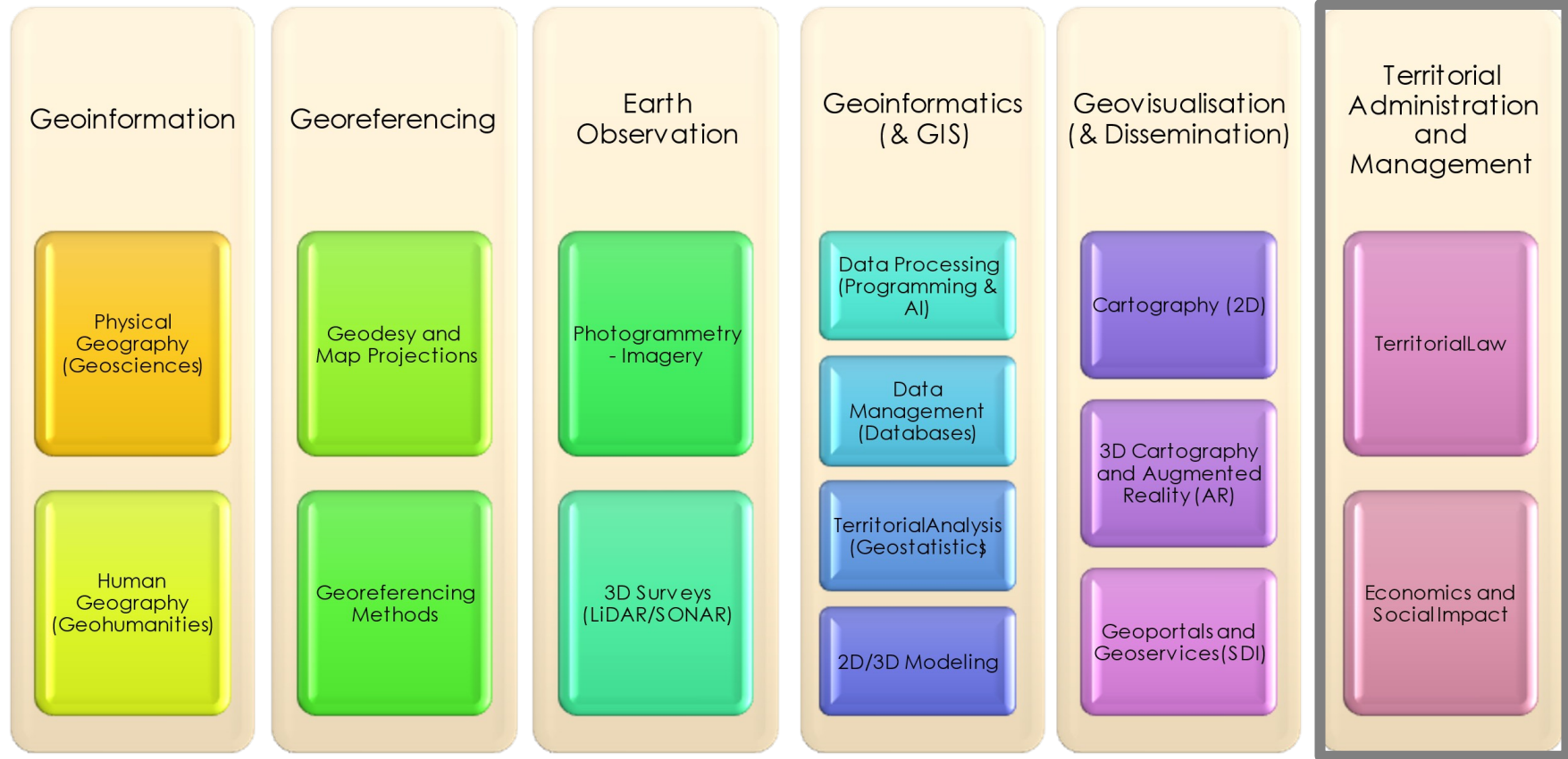
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## Academic Context



LAND ADMINISTRATION STUDIES  
-  
TERRITORIAL ENGINEERING  
-  
CADASTRAL ENGINEERING



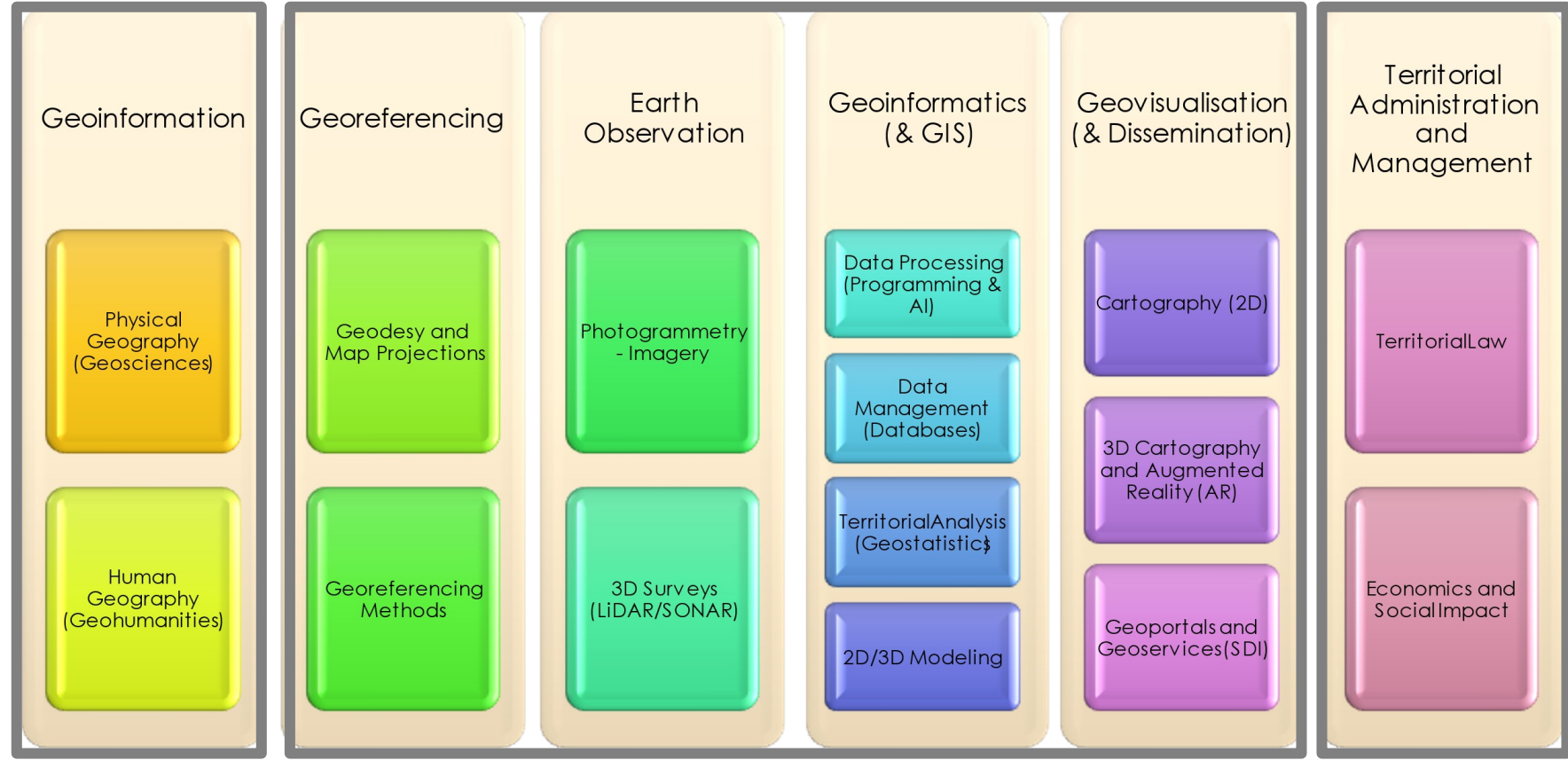
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## Academic Context



THIS IS GEOMATICS ENGINEERING  
(FOR ME....)  
- BACHELOR'S DEGREE-

GEOSPATIAL (GEOGRAPHICAL) SCIENCE  
+  
TECHNIQUES  
+  
TERRITORIAL ADMINISTRATION / MANAGEMENT  
(OUR WORLD)



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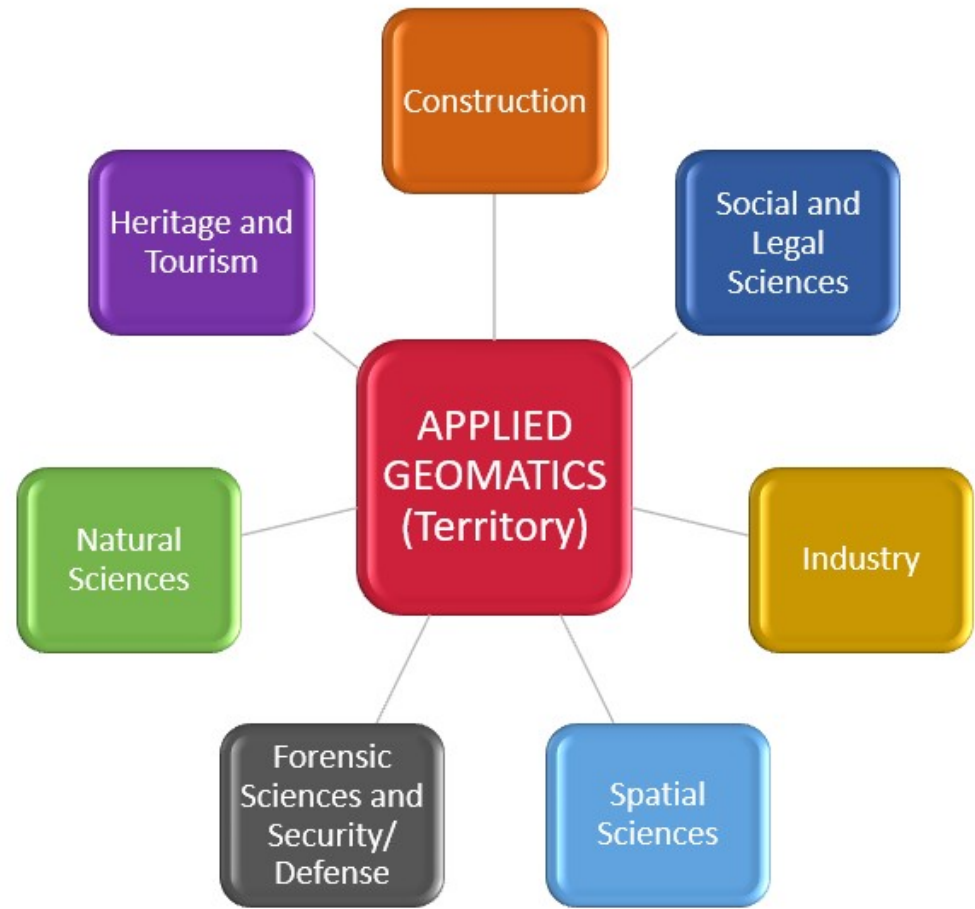
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## Academic Context

MASTER'S DEGREE





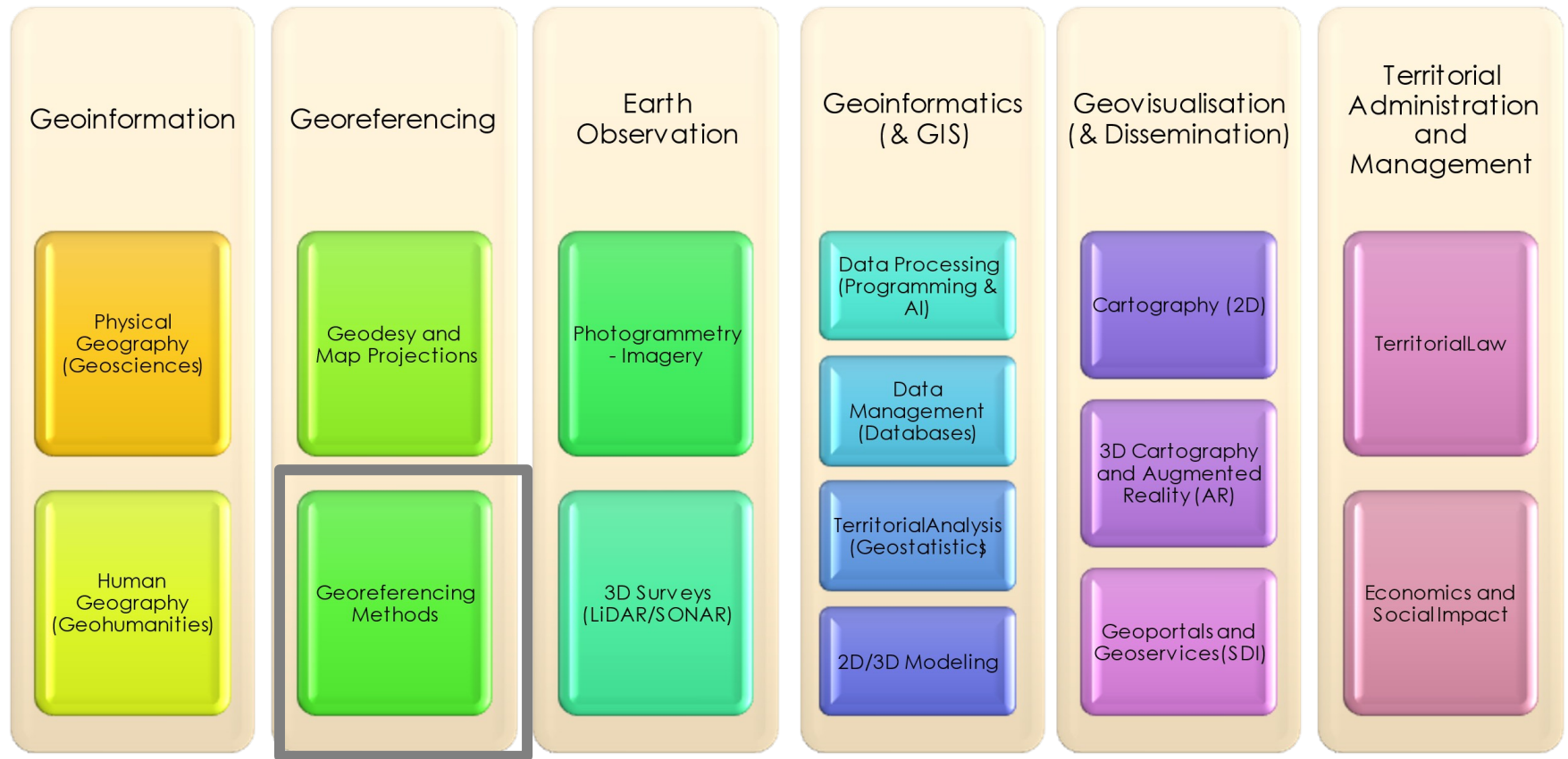
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### Professional Context



LAND SURVEYOR



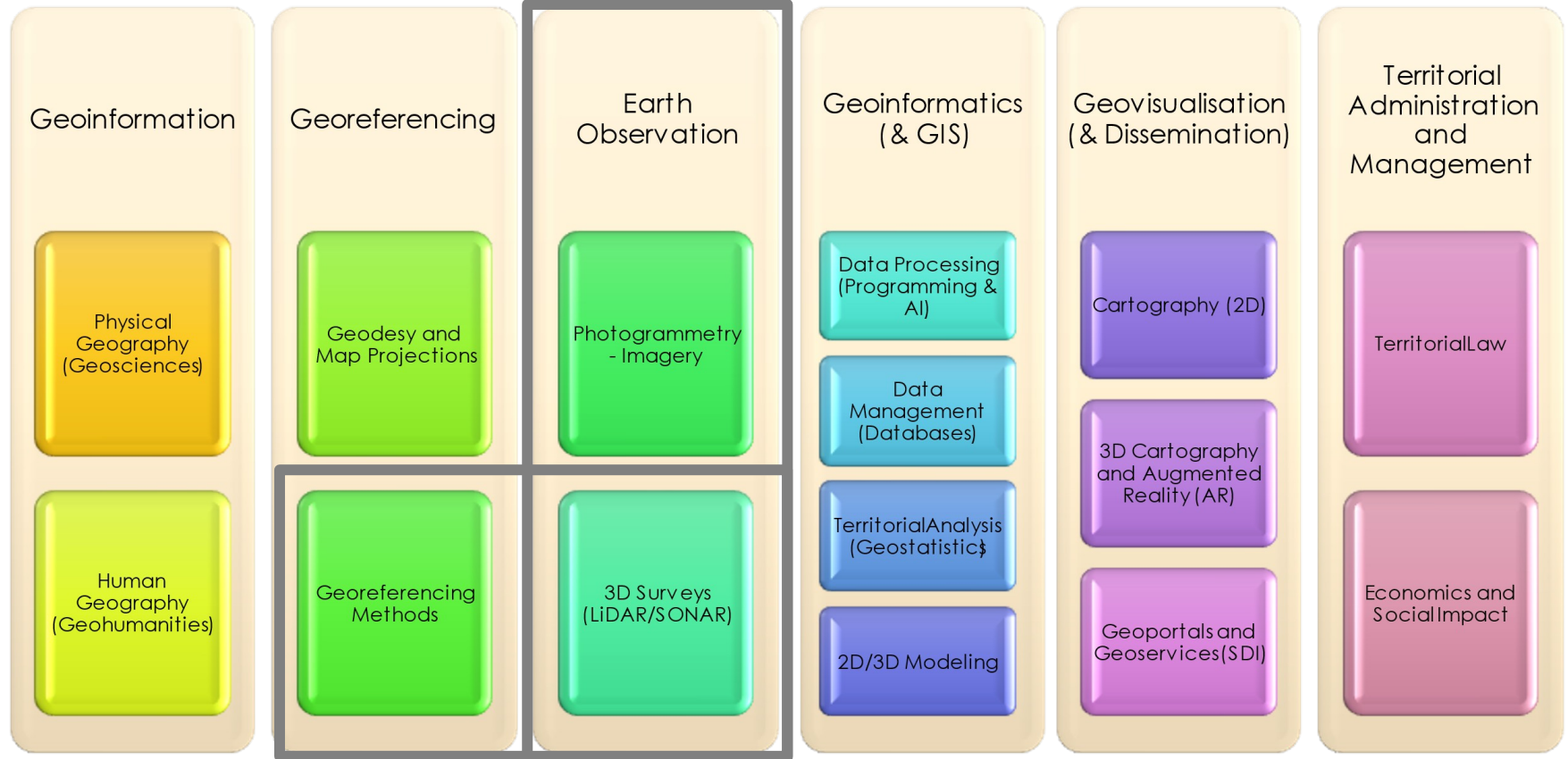
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## Professional Context



SURVEYOR



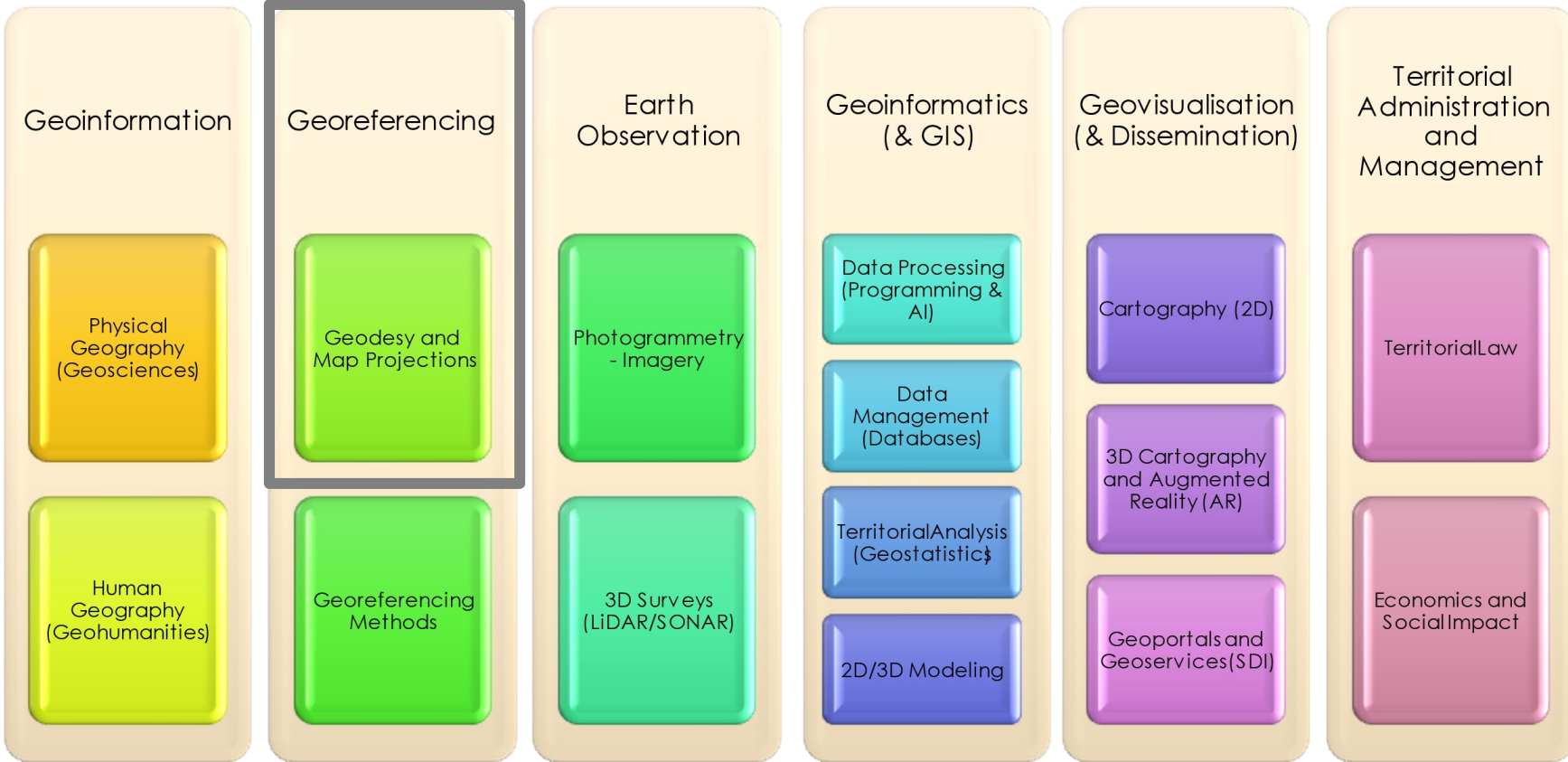
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## Professional Context



GODESIST  
(MATHEMATICIANS AND  
PHYSICISTS)





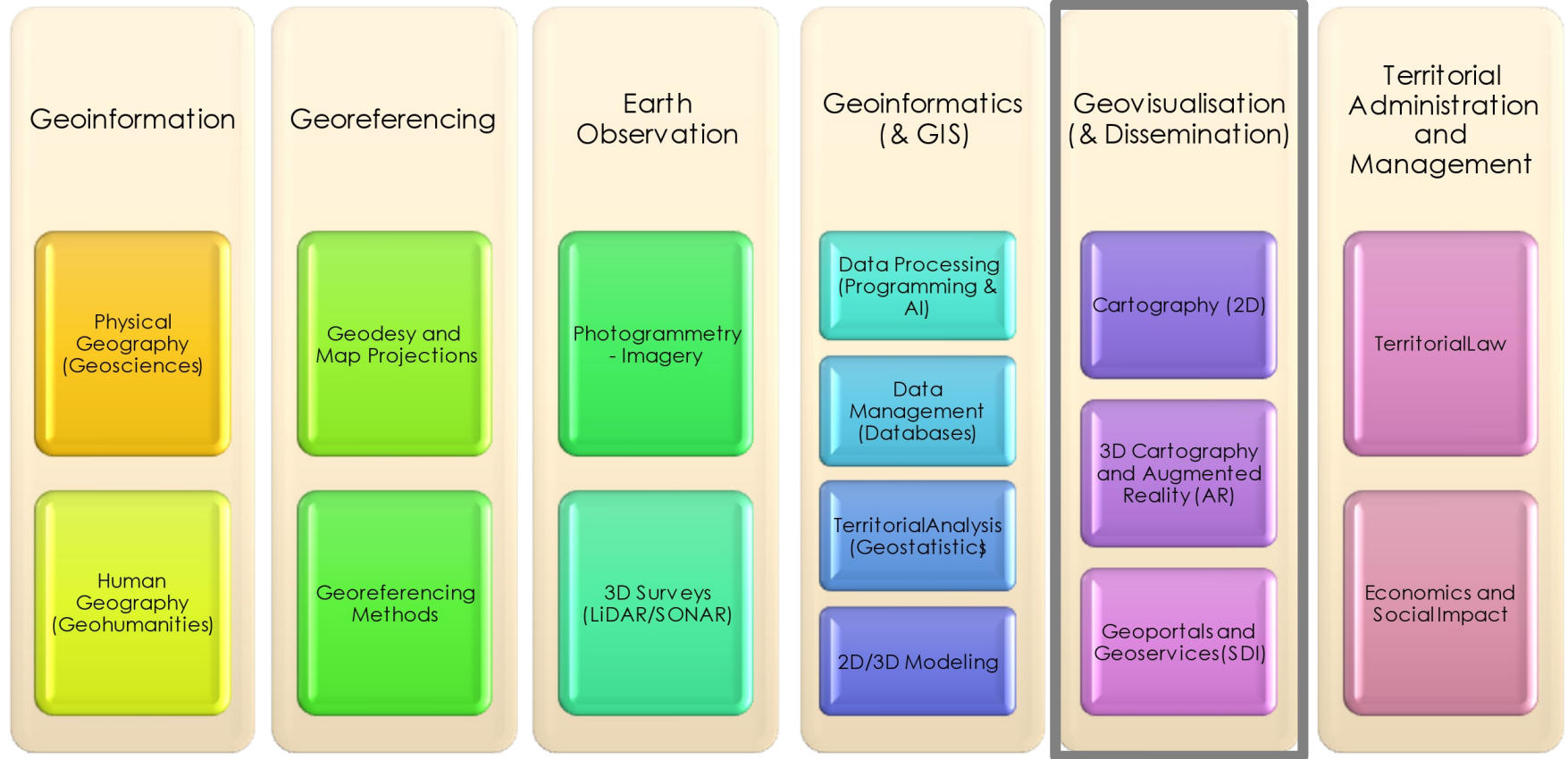
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CARTOGRAPHER



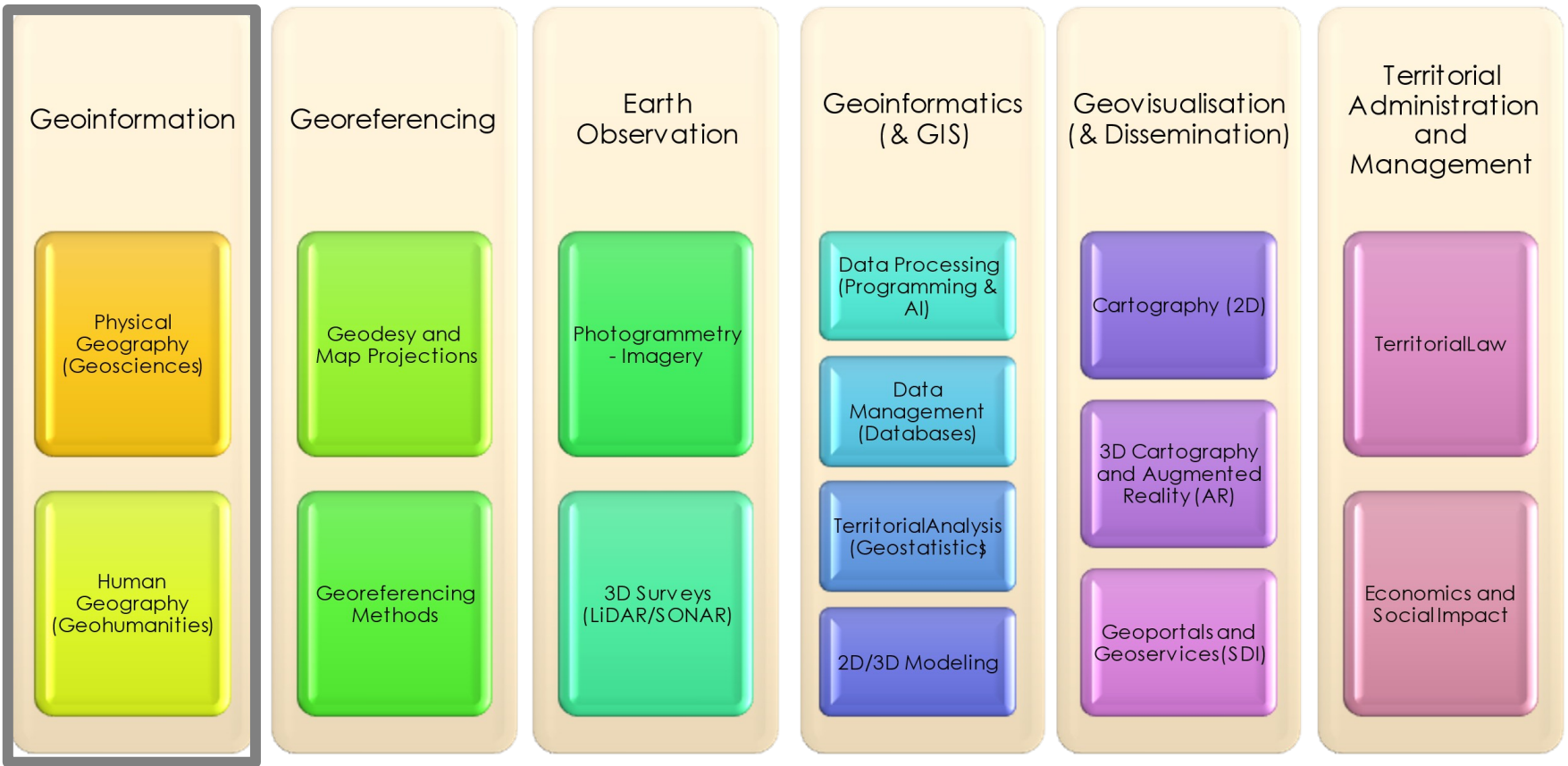
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GEOGRAPHER



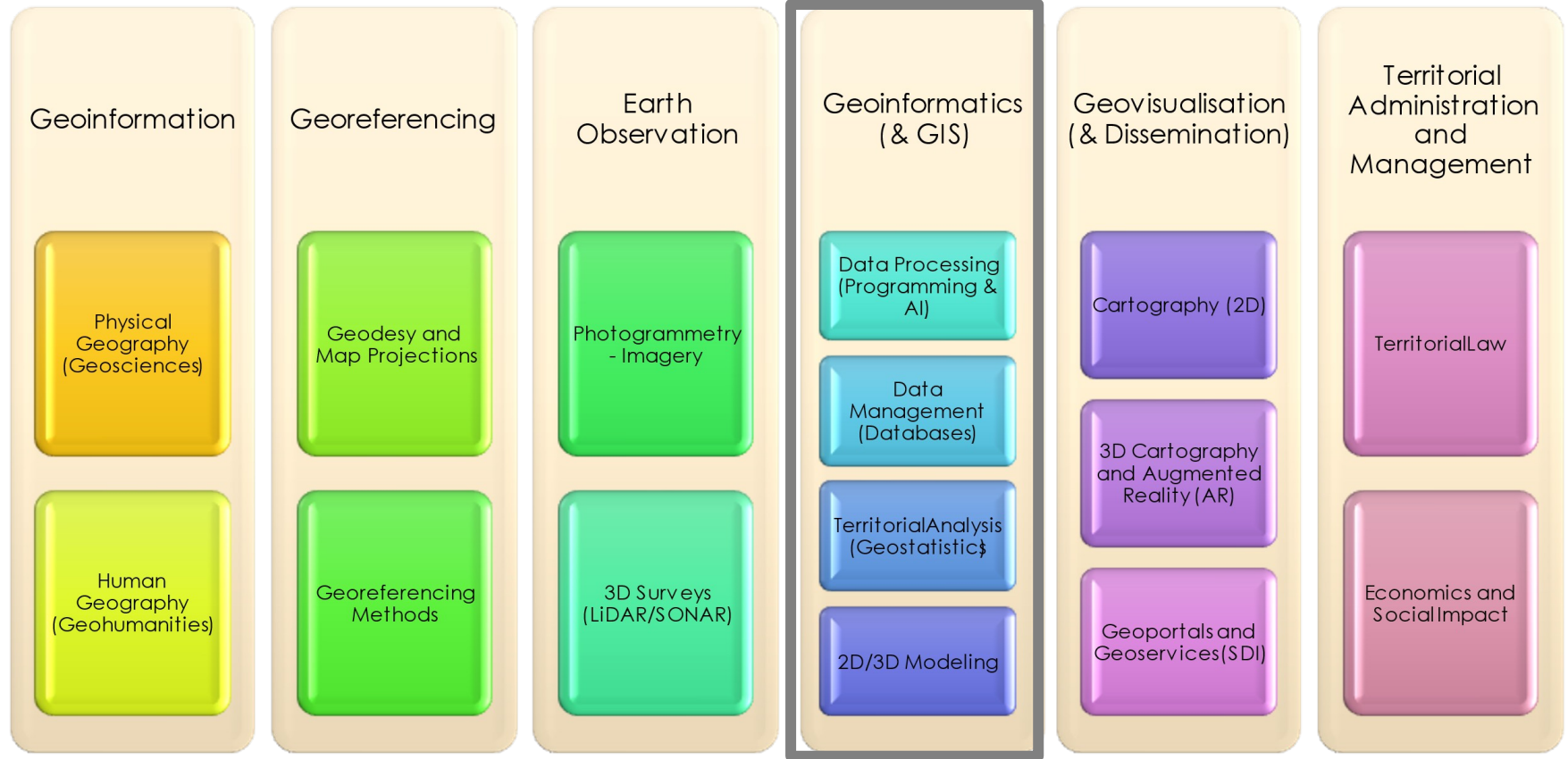
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### Professional Context



COMPUTER SCIENTIST  
-  
GIS SPECIALIST  
-  
DATA ENGINEER



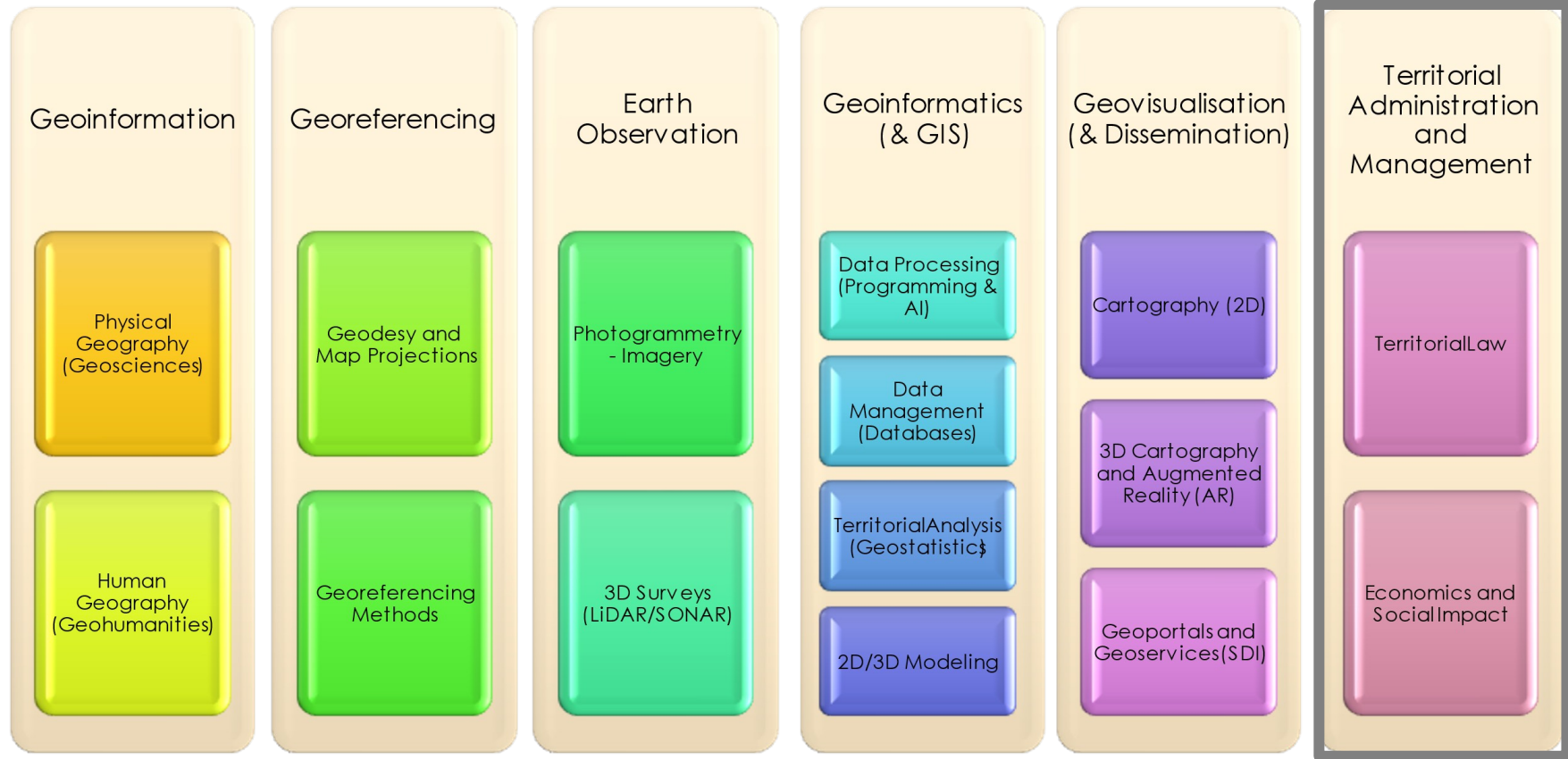
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### Professional Context



### LAND ADMINISTRATION SPECIALIST



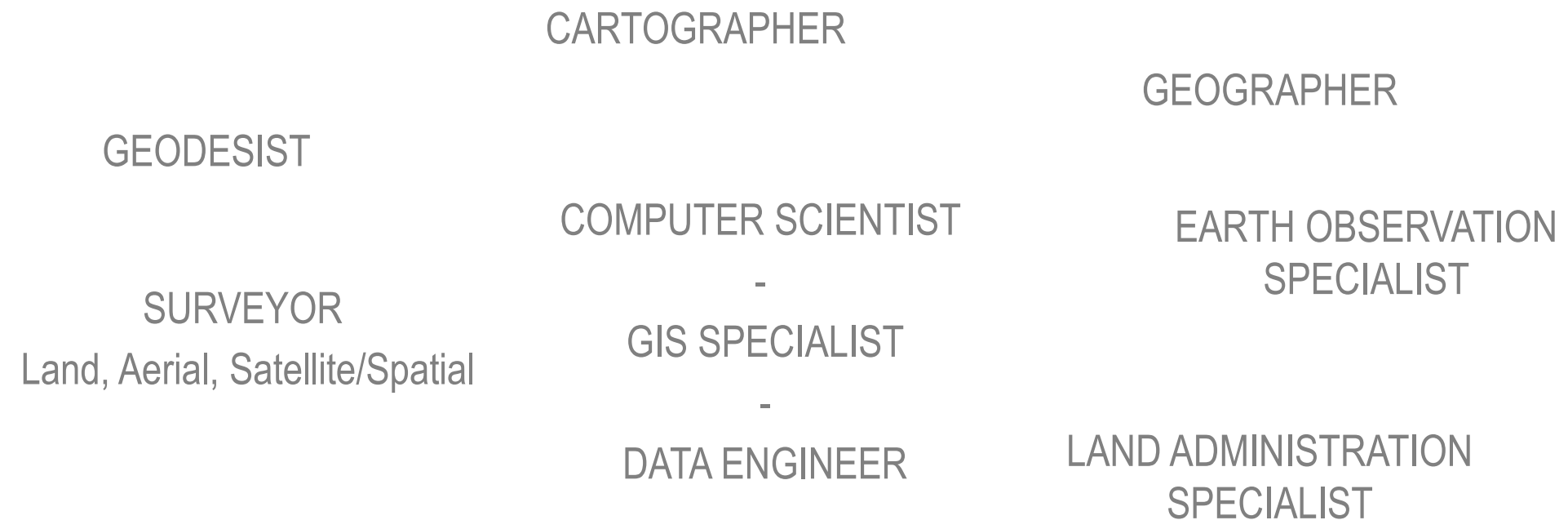
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## Professional Context





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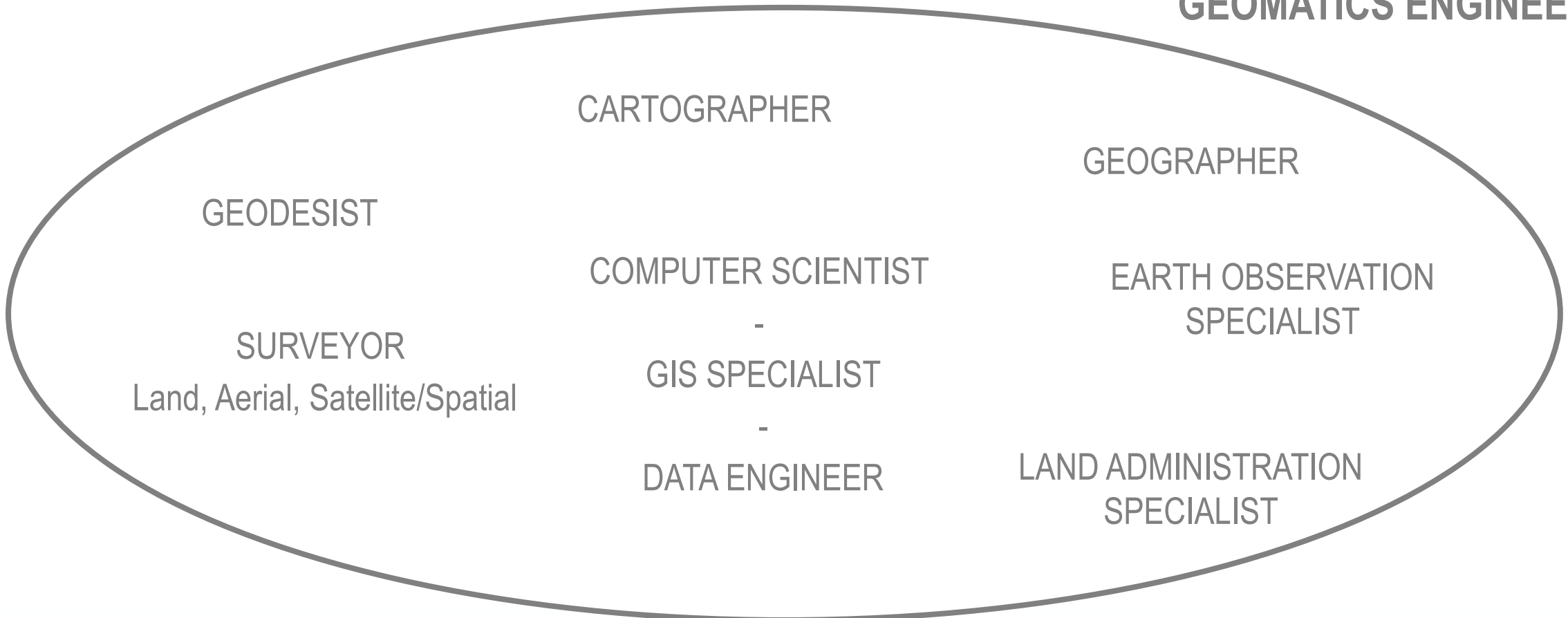
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### GEOMATICS ENGINEER





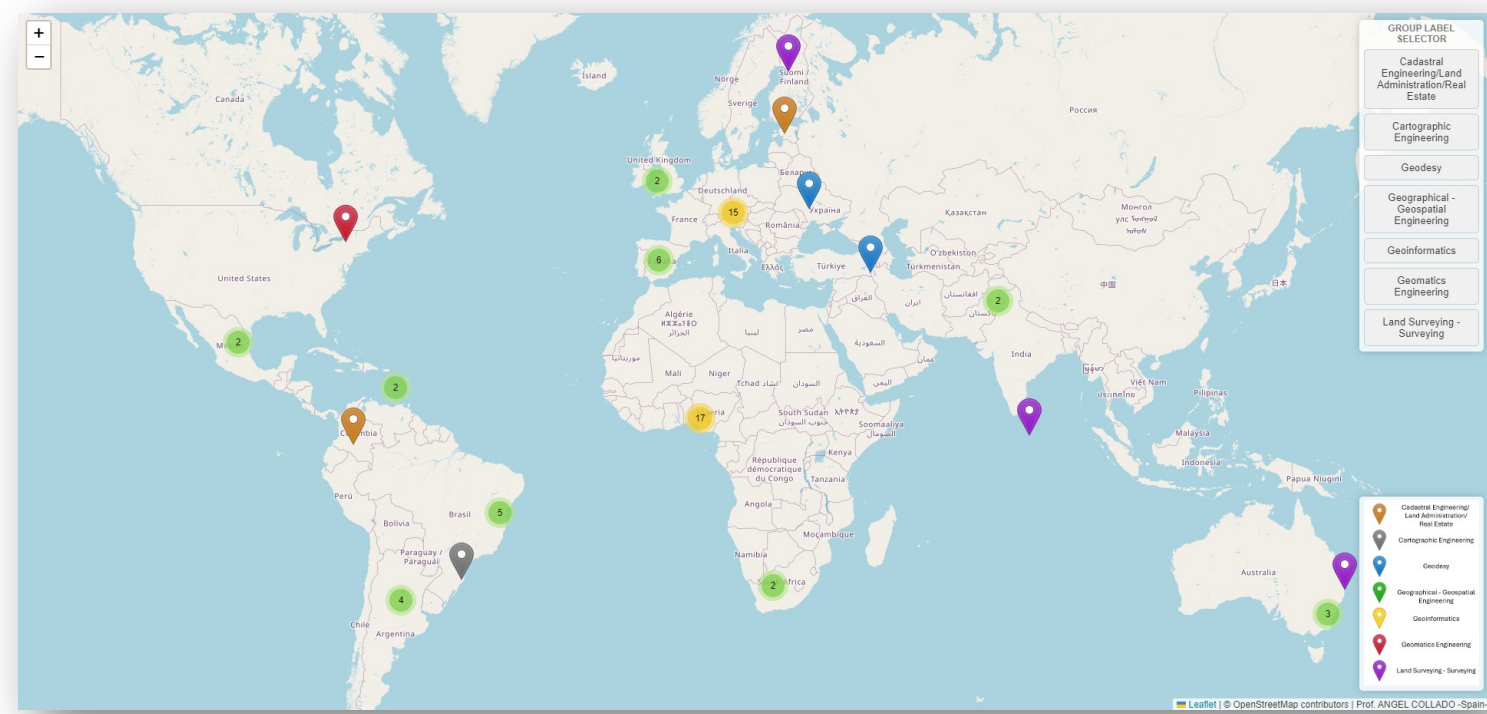
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## CONCLUSIONS



BY A GLOBAL ONLINE SURVEY



## WORLDWIDE MAP VIEWER INVENTORY OF GEOMATICS STUDIES

**METODOLOGY**  
GLOBAL ONLINE SURVEY



ENGLISH

- Basic information about the university and contact details
- Questions about the Bachelor's Degree and its curriculum
- Question about the professional requirements in your country
- Personal opinions about the current and future situation of our discipline
- Personal opinions about the meaning and relationship of different disciplines related to our profession.

Angel Collado & Rosario Casanova & Dimo Todorovski



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## CONCLUSIONS



WORLDWIDE MAP VIEWER  
INVENTORY OF GEOMATICS  
STUDIES

*+ 350 Universities  
(Only Europe –without UK- and  
America)*

*Manual search on the Internet,  
university by university*

[https://professorangelcolladospain.on.driv.tw/Geomatics\\_MAP/](https://professorangelcolladospain.on.driv.tw/Geomatics_MAP/)







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