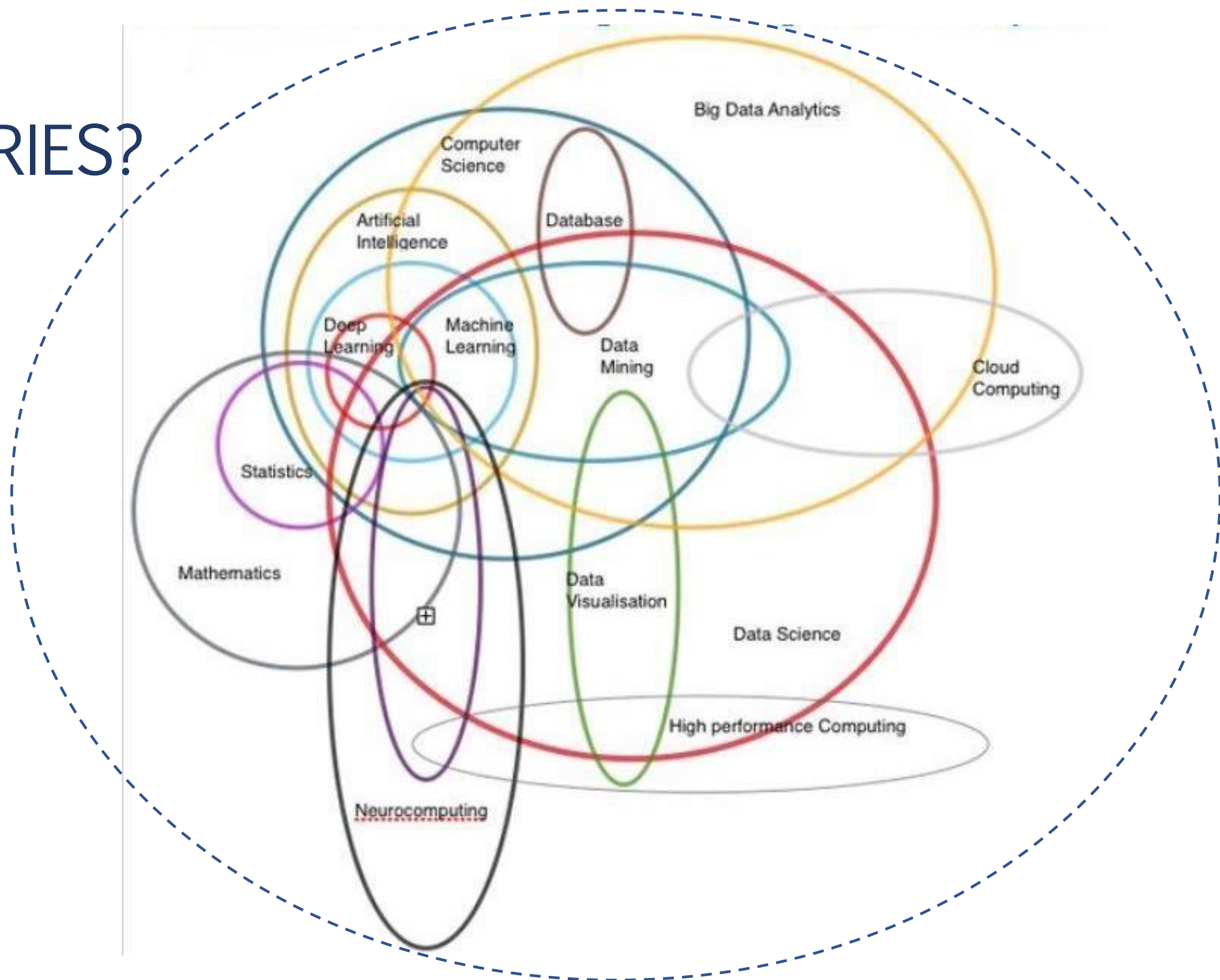


DATA SCIENCE

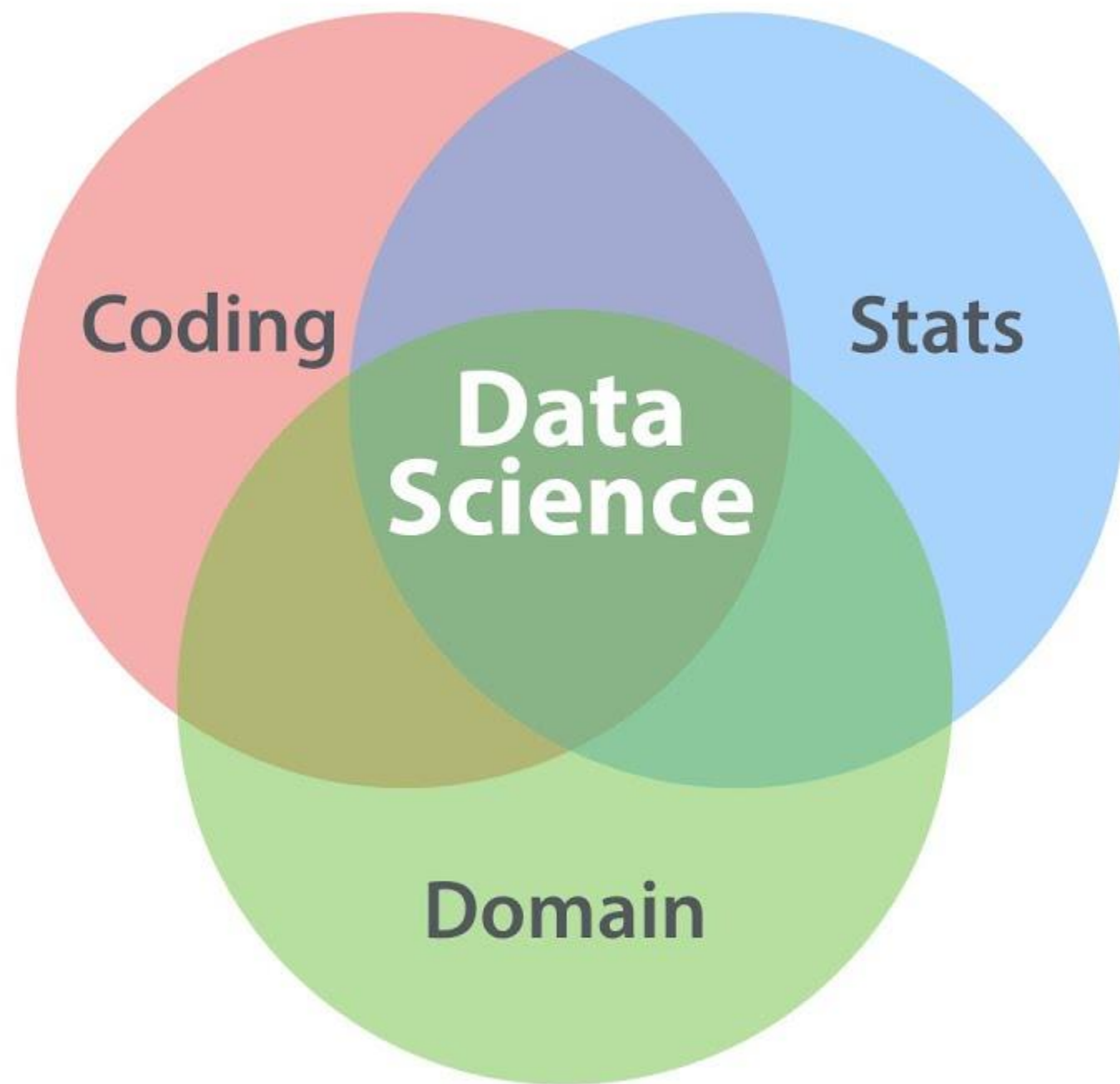
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FIELD DEVELOPMENT

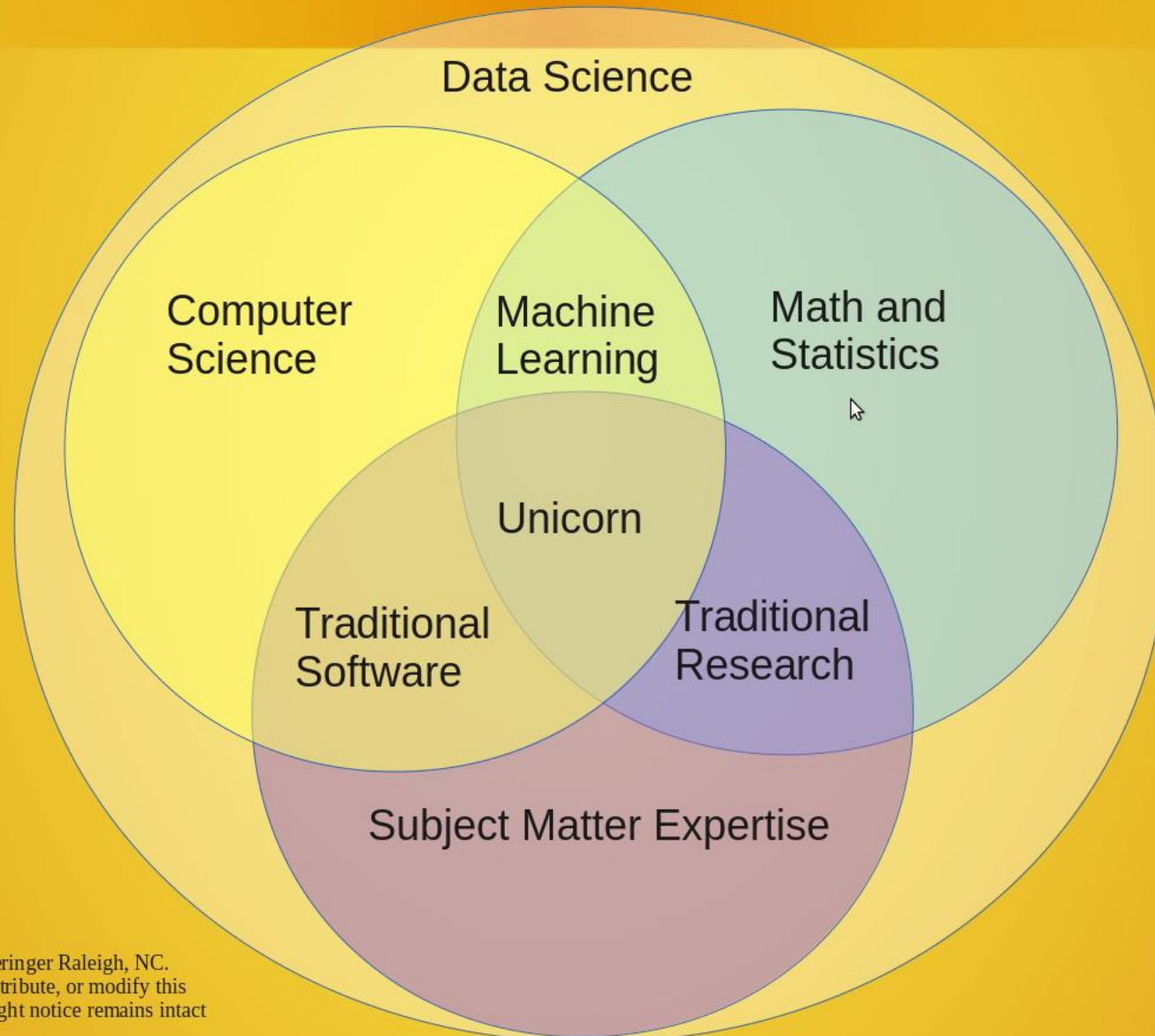
DATA SCIENCE FIELD BOUNDARIES?



CAREER PATHWAYS



Data Science Venn Diagram v2.0



EVALUATION PROFESSIONS

Specialist (PhD / Team Lead)



DATA SCIENCE PROFESSIONS

Specialist (Machine Learning)



Generalist
(Design Evaluations)



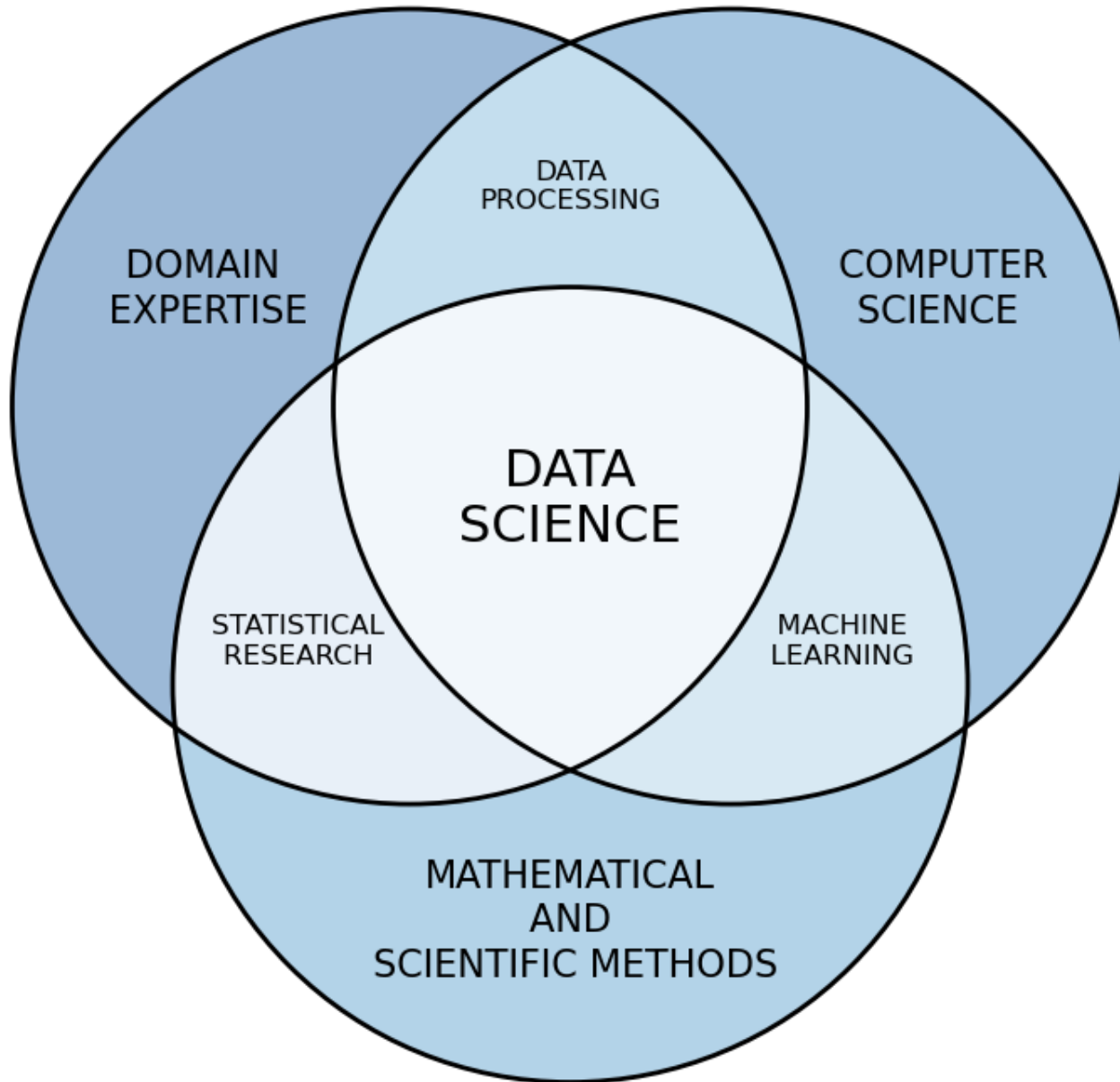
Generalist
(Inference w Data)



Tech
(Collect Data &
Write Reports)

Tech
(Wrangle Data &
Write Reports)





Data Science Professionals

- Data Analyst
- Program Evaluation
- Machine Learning Specialist
- GIS Specialist

- Database Manager
- Data Engineer / Big Data
- Data Architect / Warehousing

- Data and Analytics Manager
- Chief Data Officer
- Data Czar

Make vs Manage?

DS₄PS

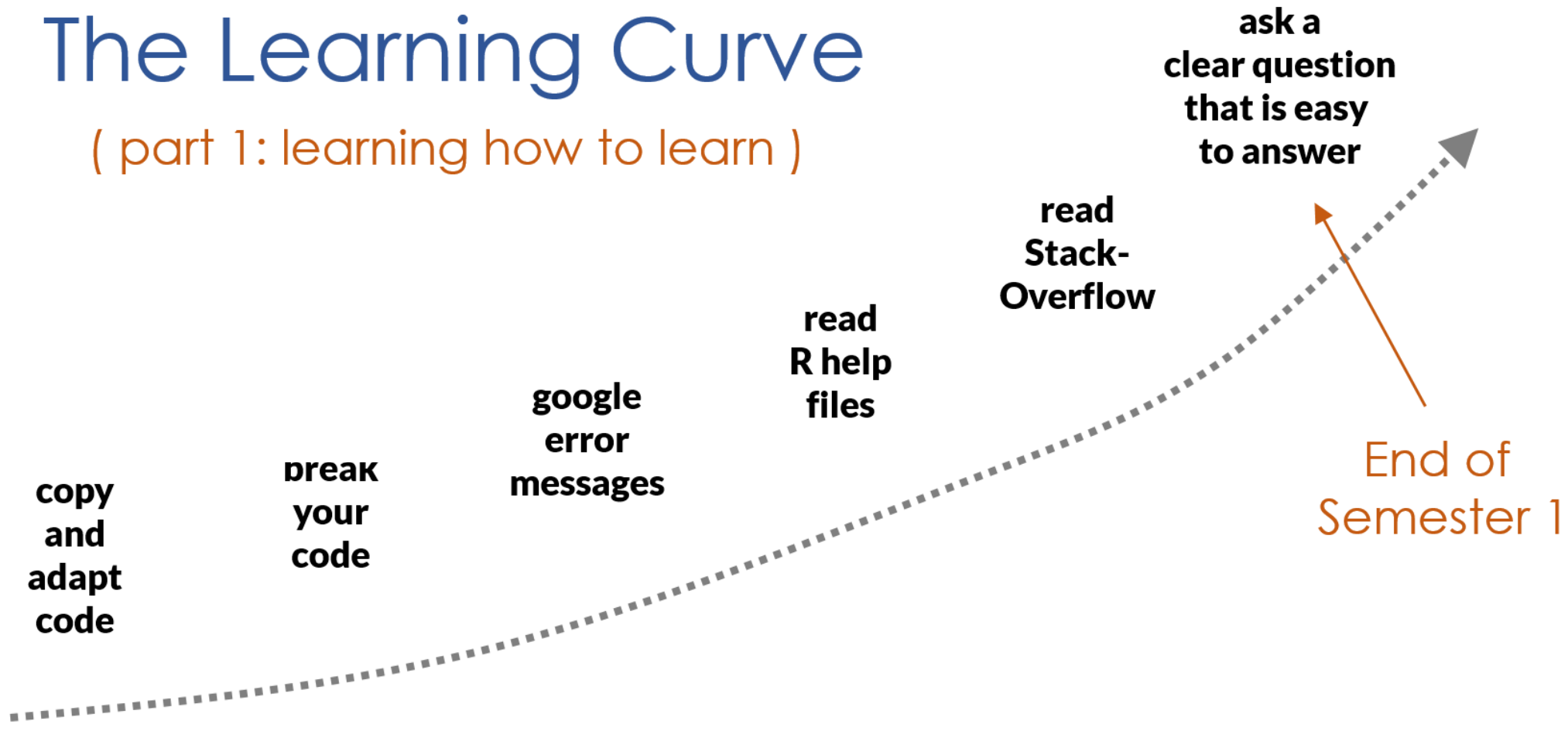
PEDAGOGY

THE LEARNING CURVE

Data Science
Skill Level

The Learning Curve

(part 1: learning how to learn)



THE LEARNING CURVE

CPP 526: DS 1

- Read existing code
- Read documentation
- Adapt code
- Participate in discussion boards

CPP 529: Com Analytics

- Use data APIs (census data)
- Manage non-standard data types (map files)
- Master object types and work-flow

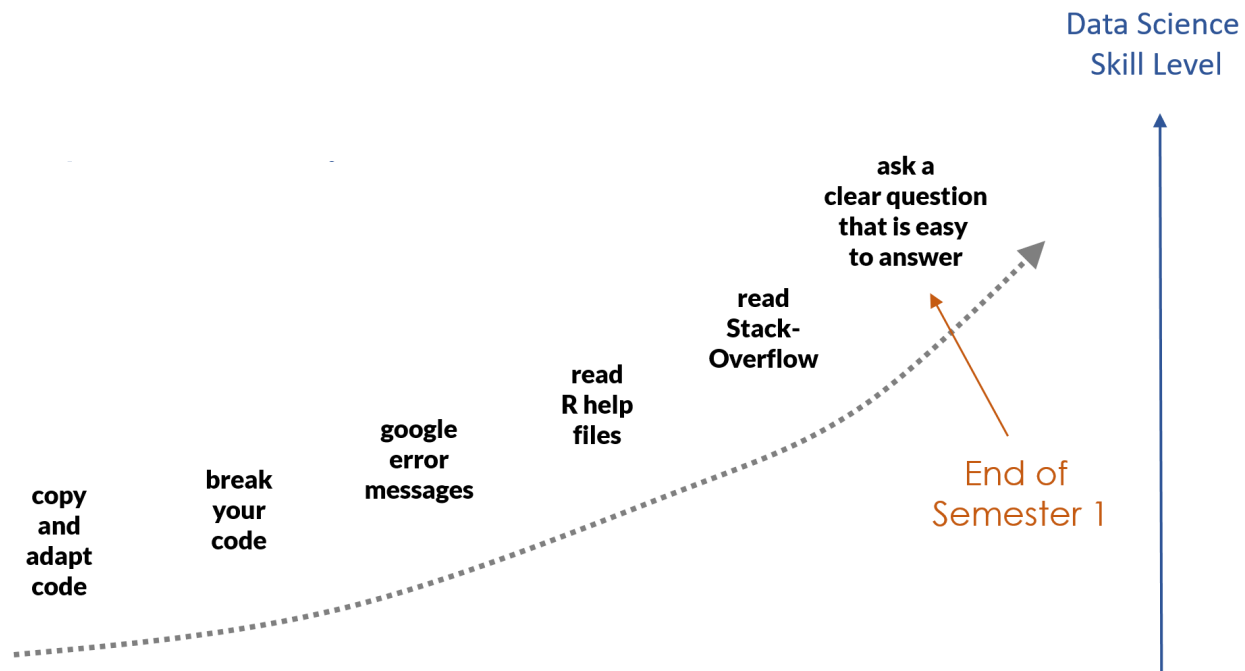
CPP 527: DS 2

- **Write custom functions**
- **Create an R package**
- **Create custom report templates**
- **Build a website**

CPP 528: DS 3

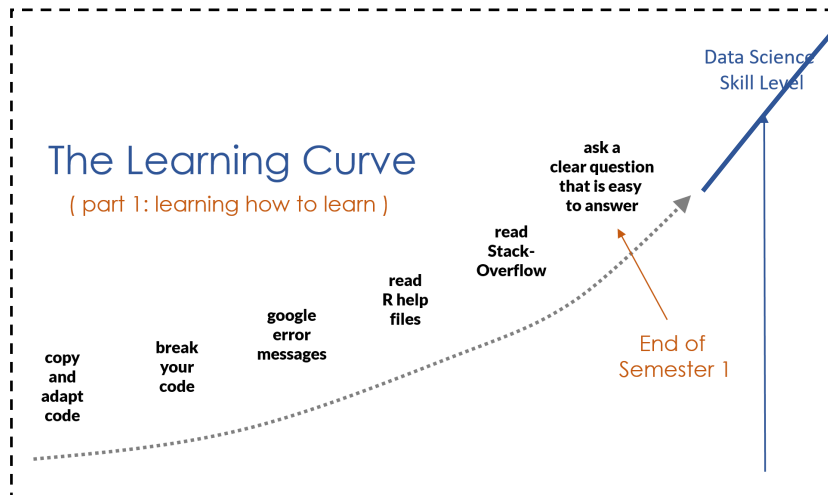
- Manage large projects
- Utilize GitHub effectively for collaboration
- Use tools to ensure work is reproducible

CPP 527



It takes 5-10 years for your personal development to plateau

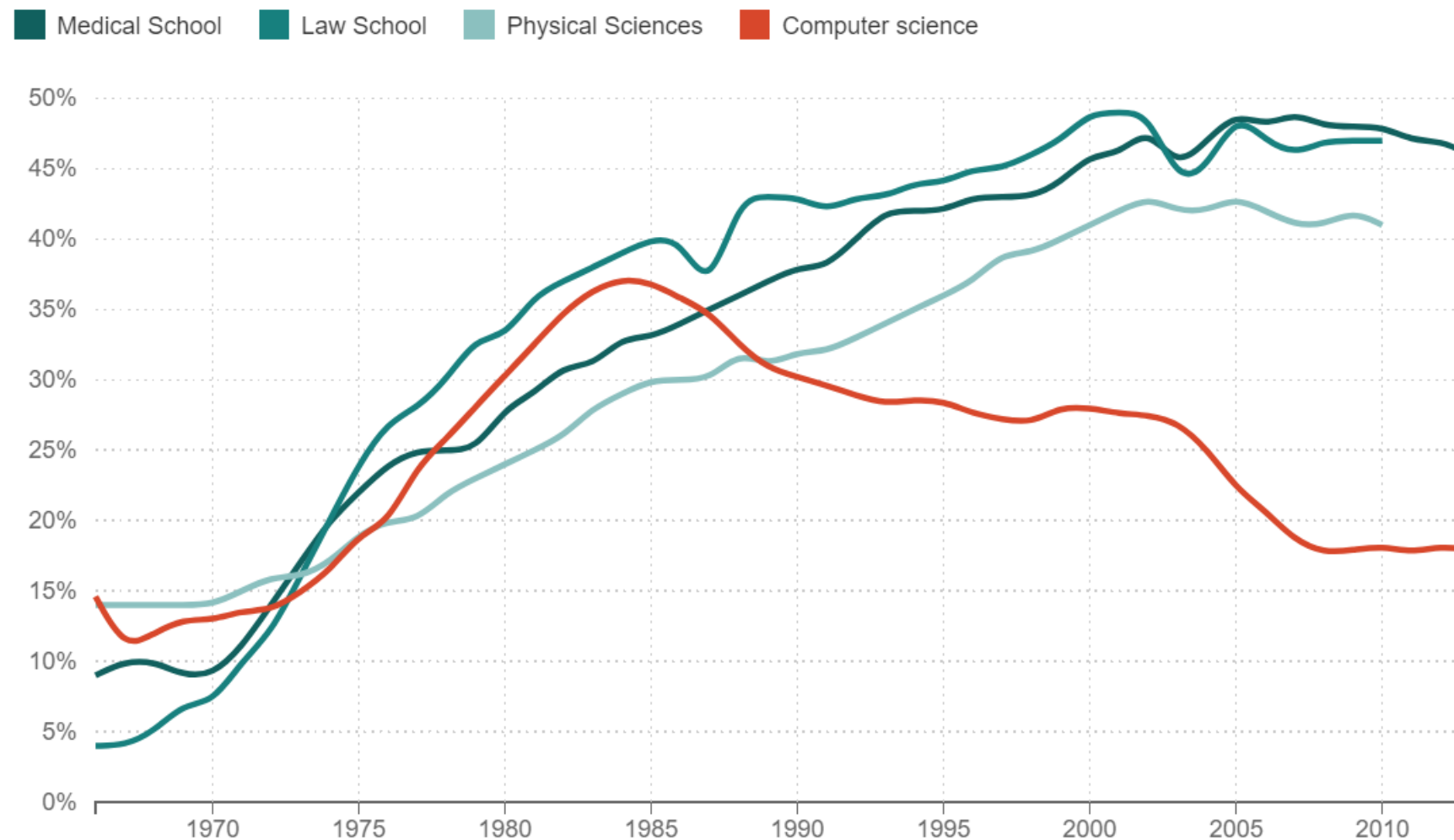
It takes 5-10 years
for skill development
to plateau



What foundations do we
need here to enable this?

What Happened To Women In Computer Science?

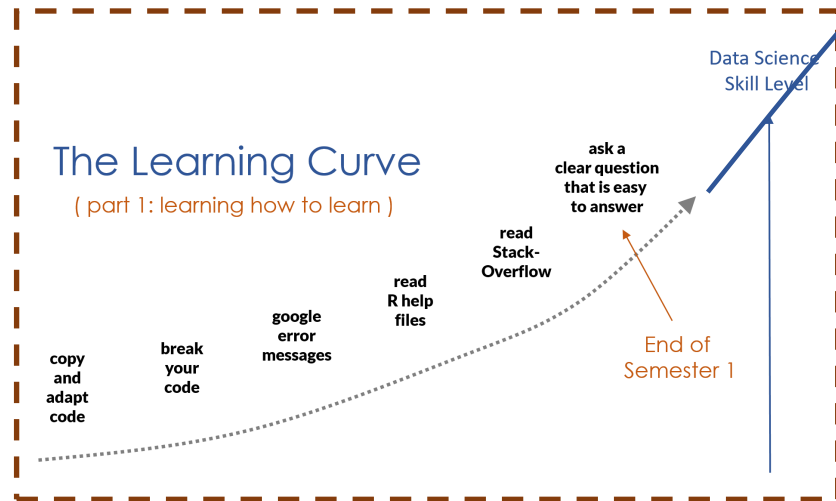
% Of Women Majors, By Field



Source: National Science Foundation, American Bar Association, American Association of Medical Colleges

Credit: Quoc Trung Bui/NPR

What support do students need here?

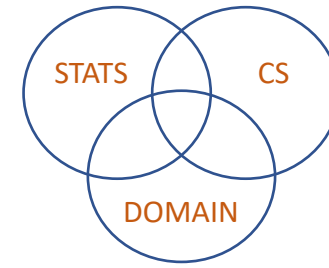


What foundations do we need here to enable this?

ELECTIVES AND CAPSTONE

2 Electives
1 Capstone with client

→ Opportunities for specialization



CORE COURSES

