



BUSINESS SCHOOL
AAU AALBORG UNIVERSITY

Welcome to

Business Data Science 2024/25

Social Data Science 2024

Roman Jurowetzki | Hamid Bekamiri | Primoz Konda
| Christian Nielsen | Eskil Olav Andersen
2/9 - 2023



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The Team



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Roman Jurowetzki



Associate Professor, IKE Group

Technology mapping using unstructured data

Bibliometrics, patents, web-data

Recently very much into studying Neurotechnology

❤️ NLP and unsupervised learning

AI Denmark

Other than that: Cycling, Dog person, Yoga, Winter Bathing 😊



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Hamid Bekamiri



Assistant Professor, IKE Group
Technology and Science mapping
AI Denmark

Outside of the university, I enjoy outdoor activities, such
as football ⚽ and cycling

Primoz Konda



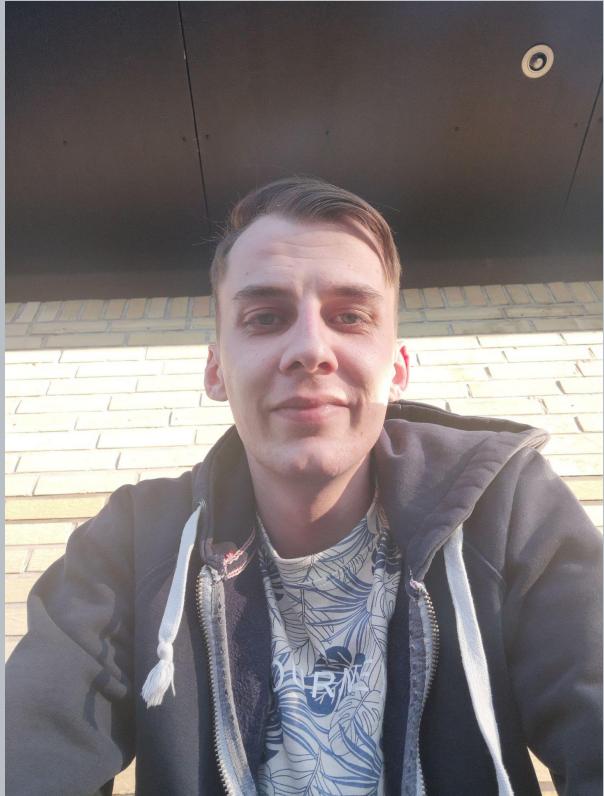
AI generated image of myself

Post-doc, IKE group

AI Denmark

Other than that: climber, rower,
kayaker, runner etc.

Christian Nielsen



Research Assistant, IKE Group

Recently graduated from Business Data Science in summer 2024

Newcomer to the IKE group and AI Denmark

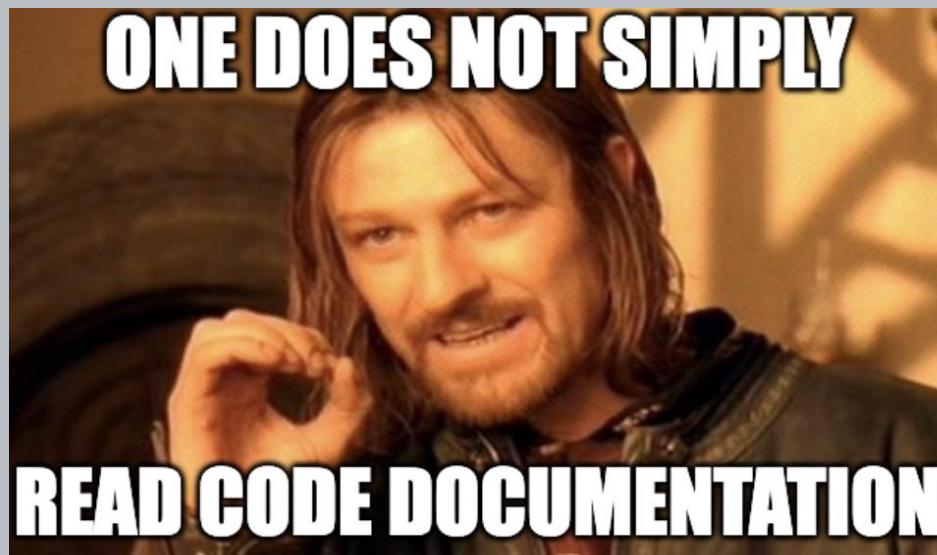
Trend analysis and technology mapping are my focus areas (thus far)

In private; Proud nerd, play around with AI and coding

Teacher assistants

Martha

Patrick



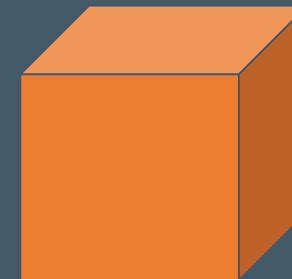
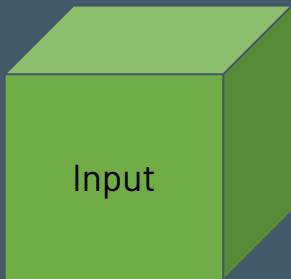
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Things have changed



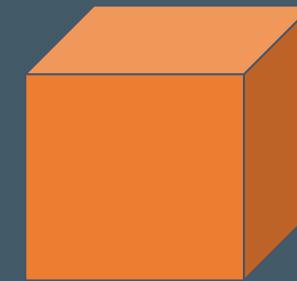
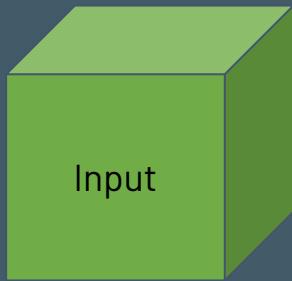
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credit card transaction is fraudulent or not

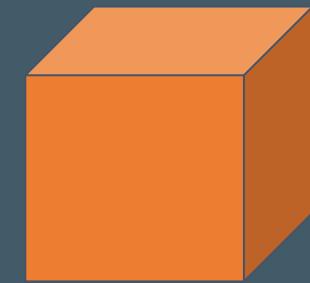
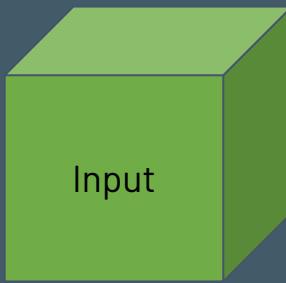


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AL-RASHID UNIVERSITY

**credit card transaction
is fraudulent or not**

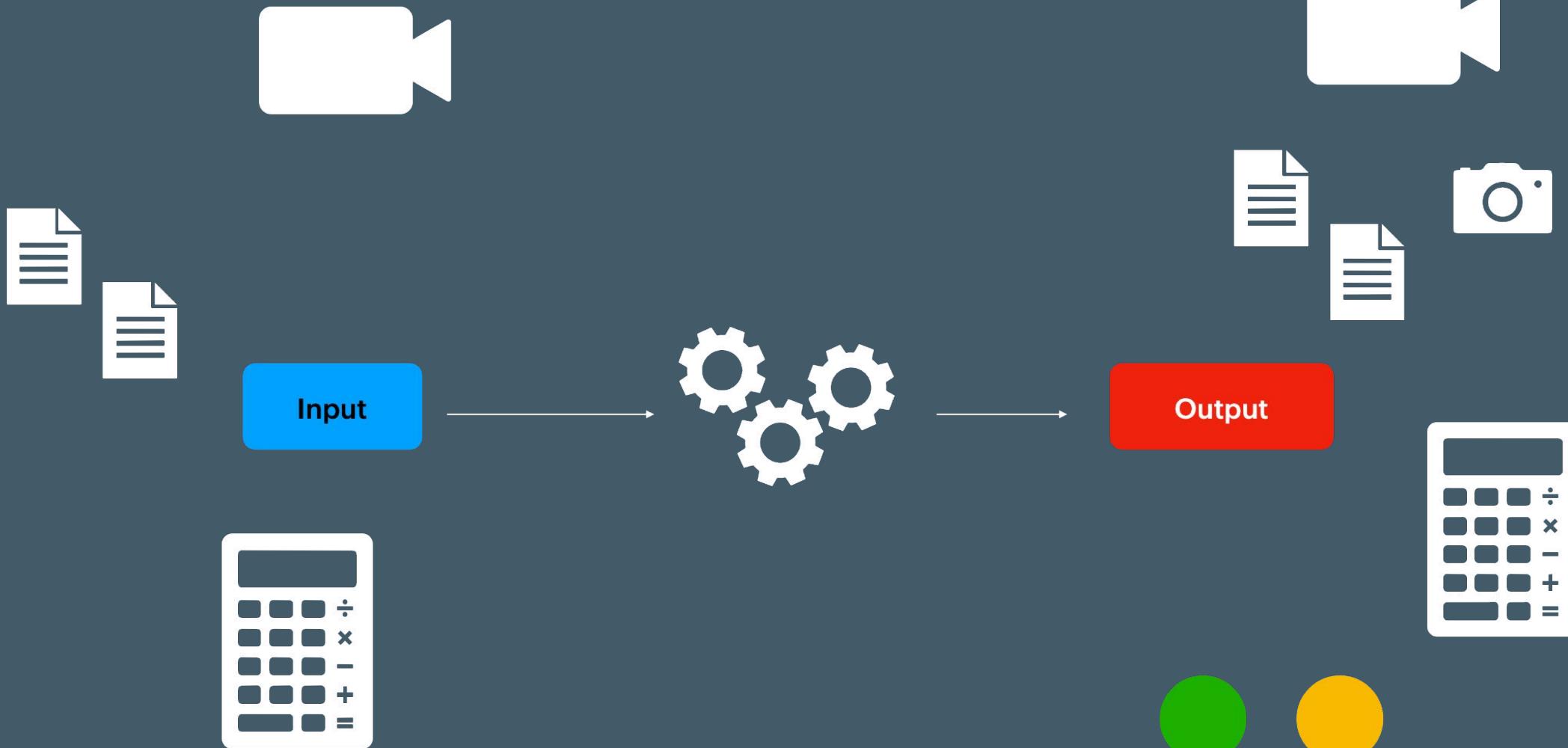


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DAI ROSSI UNIVERSITY



BUSINESS SCHOOL
JIANGTENG UNIVERSITY





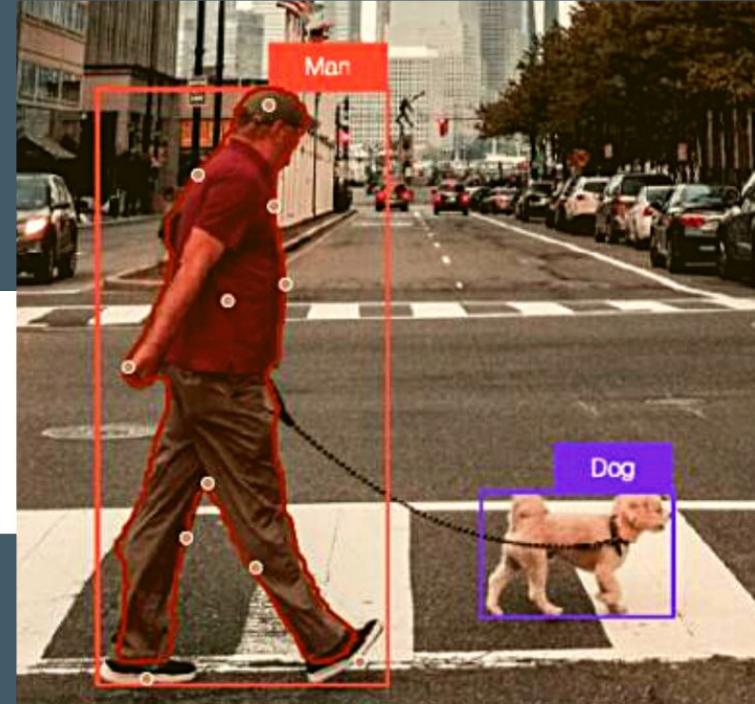


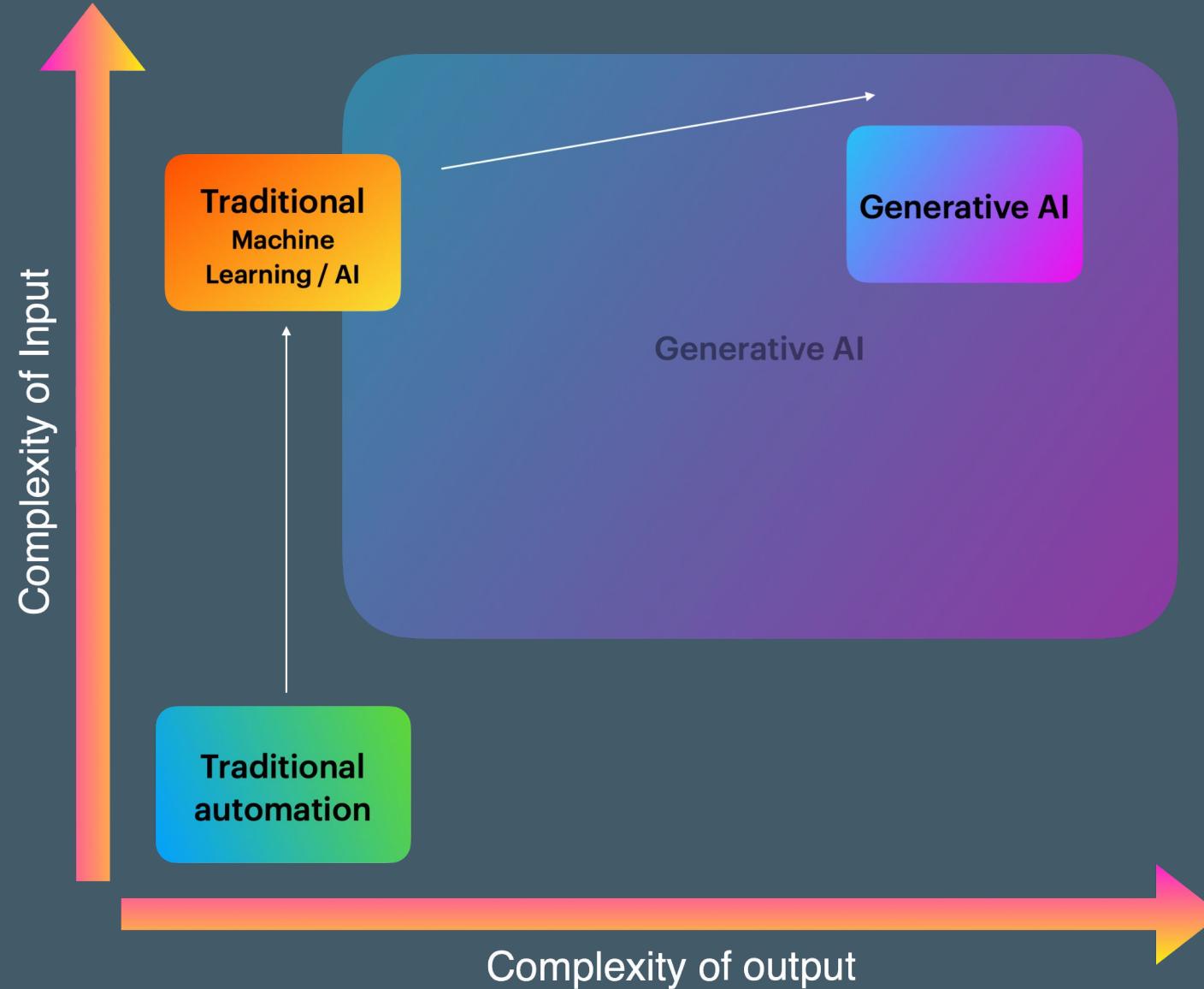
Generative AI
Generalist model learns in context - inference time

Machine Learning (Traditional AI):
Specialist-model learns from our (well curated) data



Traditional Automation:
We need to define all the rules! No learning.





**Company
needs to
develop their
own models**



**Company develops
applications on top
of foundation
models**



What does that mean for you and us?

Overall: good news!

- AI becomes commodity?
- More possibilities - especially outside technical / production application
- Idea to MVP reduced
- Data availability requirements lowered
- AI enters the organization via individual employees
- More focus on innovation & learning
- Organizational change
- AI Applications now increasingly developed by traditional devs.



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GenAI can work autonomously
GenAI can support development of “simpler” systems

Organisational learning and capability perspective

GenAI needs human supervision

Learning

Limited learning

Capacity development / Core capability of orga.

Knowledge sources

Relevant knowledge is codified

Relevant knowledge is tacit

Specificity

Routine

Specialist / Creative

Mostly safe to use genAI

Needs individual assessment if process critical or central



Meet BDS 2023



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Get to know each other

PSA from the Study Board

With some Rosie the Riveter -inspired AI Artwork

The learning model at AAU and AAUBS

Program Focus: Problem-Based Learning (PBL)

- Builds skills in solving real business challenges
- Mix of independent & team activities

PBL in Action:

- Present in courses, projects, and lectures
- Includes case work & business partnerships

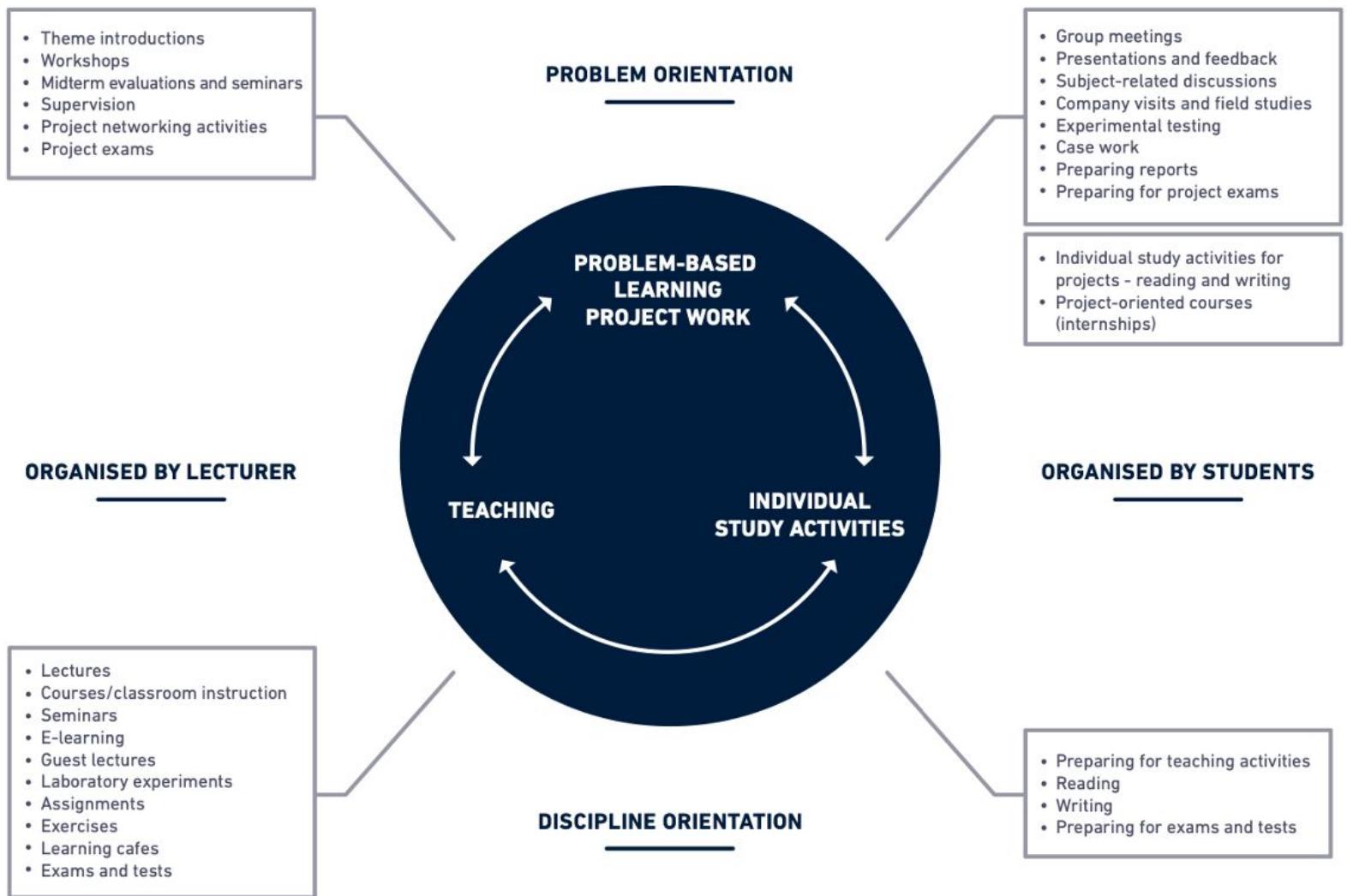
Key Values:

- Interdisciplinary approach
- Teamwork & individual growth

Learn More: PBL Intro Films
(<https://www.pbl.aau.dk/films>)



AAU Study Activity Model



The study activity model at AAU

University programmes in Denmark are full-time. This means that students in Bachelor and Master degree programmes must spend approximately 43 hours in active programme weeks on their studies.

The expected allocation of work hours for a given module can be found in the course description on moodle
(1 ECTS = 27 hours of work)

Example on full semester (30 ECTS):

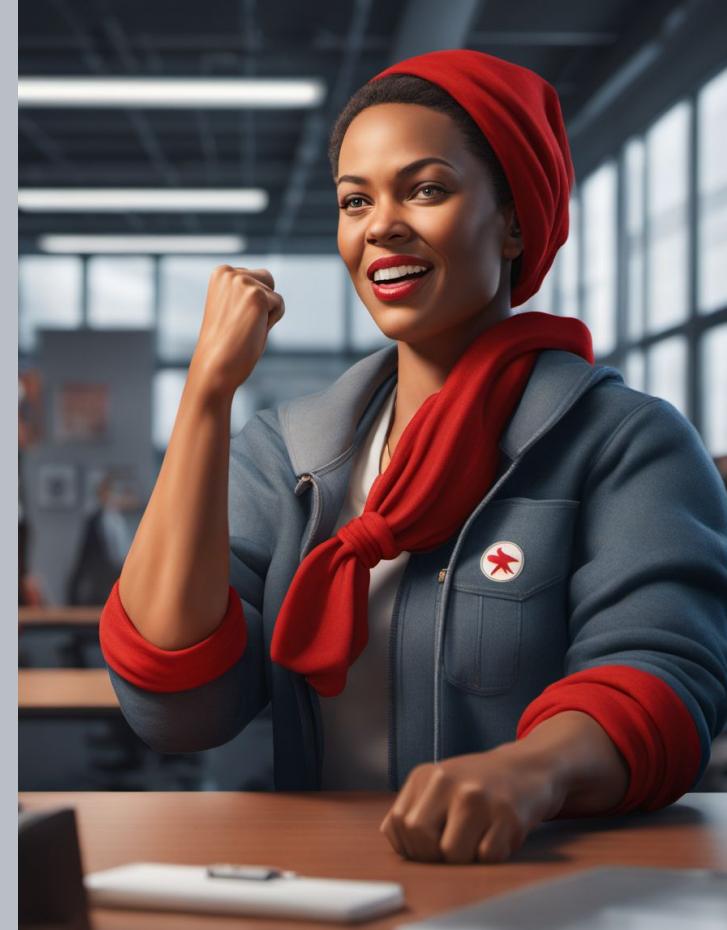
	ECTS	Hours	
Module A	15	405	Module B:
Module B	5	135	8 double lectures (16 hours)
Module C	5	135	8 exercises sessions with teacher (16 hours)
Module D	5	135	16 hours online exercises in Connect (16 hours)
Total	30	810	Preparation for lectures (87 hours)

The Study Board of Economics and Business Administration

- Oversee quality, organization, & development of degree programs
- Manage staff & student involvement
- Affiliated with one or multiple departments

Composition:

- 6 Faculty Members: 4-year term, diverse research & programs, Chair
- 6 Student Reps: 1-year term, cover Bachelor's & Master's, Vice-Chair



What can the study board help you with?



Quality Assurance:

- Approve semester & course descriptions
- Evaluate student & external feedback
- Liaise with external panels
- Update study framework

Individual Cases:

- Exemption applications (e.g. extra exam time for dyslexia)
 - Additional exam attempts due to special circumstances
 - Advance credit transfers
 - Custom curriculum adjustments
- Contact: forvaltning@business.aau.dk

The programme



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BDS

but why?

- Teaching real, enjoyable content from our research
- Running a PBL-focused, challenging program
- Preparing students for a dynamic job market
- Enjoying working with data & learning together!



BDS in one very improvised slide

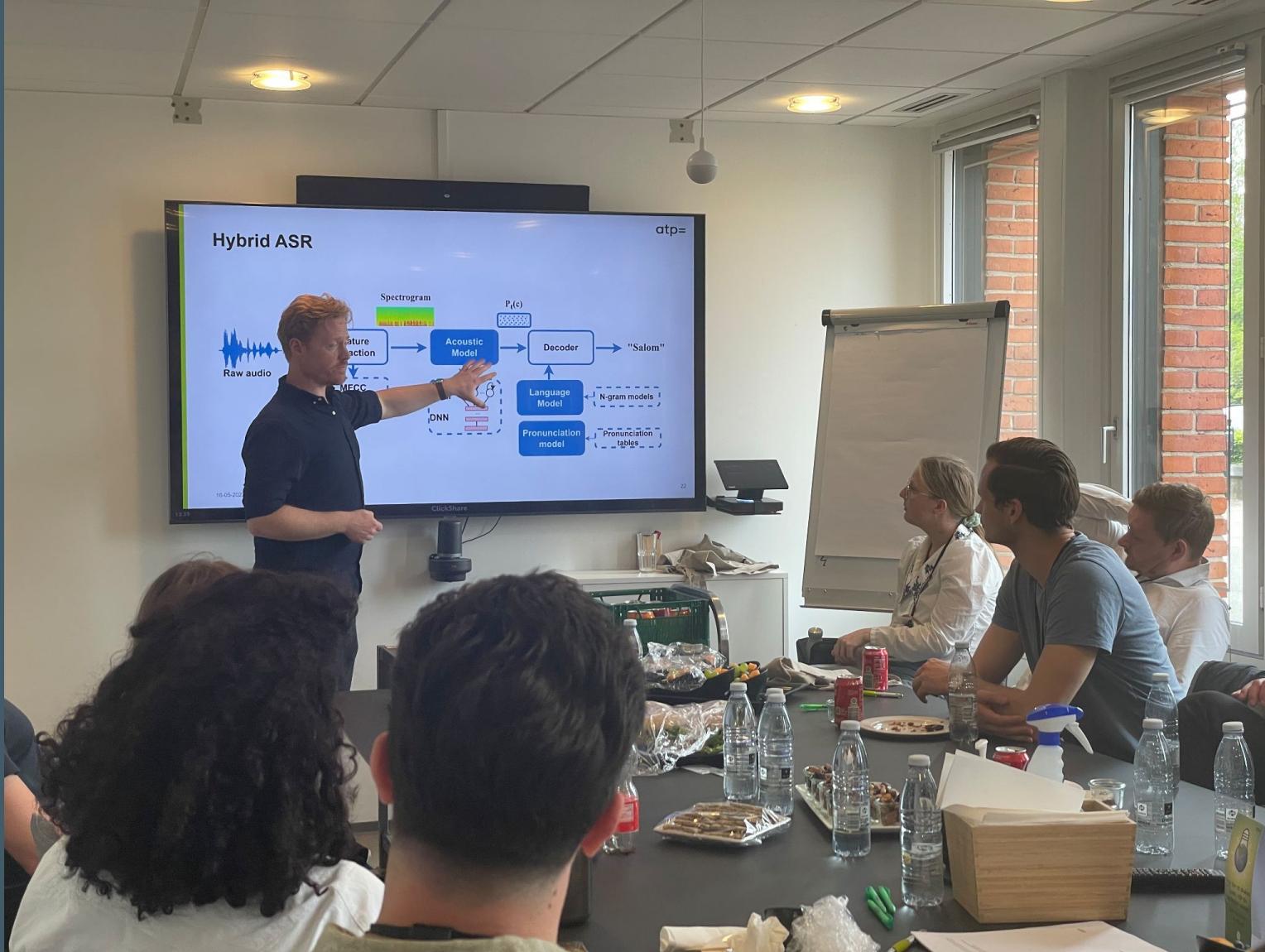


1. semester (2.5 modules + 1 Project)
2. semester
 - a. Deep Learning
 - b. MLOps
 - c. Ethics + Legal
 - d. Project
3. semester: (almost) anything goes
4. thesis

Study Trip



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This Semester



M1 - Intro to DS and ML (10 ECTS)
M2 - Networks & NLP (5 ECTS)

SDS - Deep Learning (5 ECTS) & 10ECTS

DS4B - Data Driven Business Modeling and
Strategy / Advanced Innovation Management
& Integrated project (15ECTS)

September-October

- Intro to data and EDA
- Stats / Math for DS
- Visualization & PoC tooling for Business Analytics
- Data management (APIs, Databases etc.)
- UML & Applications
- SML & Applications

Getting skilled with industry standard technologies and platforms (Python, Github, Streamlit, Gradio, Kaggle etc.)



NLP & Network Analysis

We had to redo the whole course!

NLP & NW basics

Building AI-driven applications - based on
NLP/NW

Will allow you to make much more exciting
project. But: More Black box.



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The Innovation Management Course

Because it makes sense :-)

- AI integration more than ever asks for a deep understanding of innovation processes
- Often it is not new product development or business modelling
- Large organizations reacting to rapid technological change | Automation & Augmentation
- Toolset / Frameworks to think deeper about what that means and how to go about it
- Solid academic foundation for semester project / 3rd semester / master thesis



Project

BDS:

Work with a data-science / AI / ML process in an organizational context. Build a data-driven MVP.

SDS:

Business-Econ project with DS methods
Relevant to your program
Open to collaborations but not necessary
Light(er) on theory.



The Elephant (not) in the room...



Assignments & Exams

Complex dataset - Cumulative

Need all parts as prerequisite for the exam

Work in groups but submit individually

Your own portfolio!

General overview but also detailed code knowledge.

30min to solve an assignment

Exam: discussion of solution (line by line)

Q&A related to the assignment



Literature and prep. (for now)

General resources:

Data Science Handbook (go-to guide)

Cases, Tutorials, Docs

M2: Theory papers on NWs & NLP for
social/business research

Project: Includes traditional literature

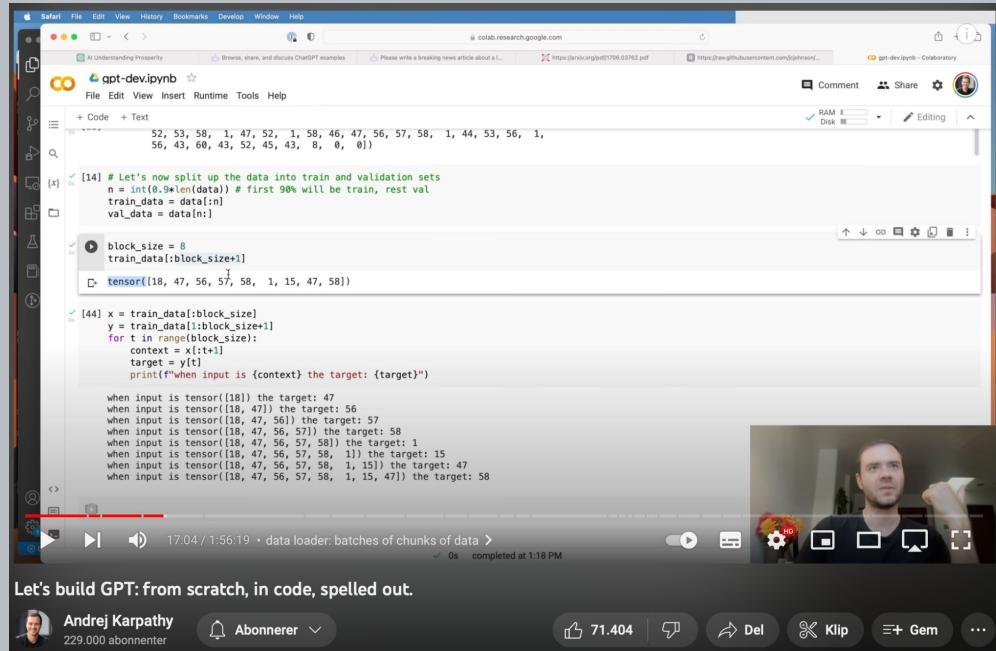
Datacamp (coming shortly)

Flexible: No single "best" source for learning



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Don't underestimate YouTube & co



Use all the other resources out there.
(Sometimes YouTube is better than an academic paper...)

Many many many industry podcasts - great source for new skills, cases, potential jobs...

Use LinkedIn

Danish Data Science Academy

Some more specific sources to start with

Yes, you should...

Podcasts:

- Practical AI
- Last Week in AI
- TWIML AI
- This day in AI (a bit crazy)

Youtube (start with those...the rest will follow)

- Sam Witteveen
- Patrick Loeber

Think about a “crazy” project



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Where is the stuff?



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Moodle

The screenshot shows the AAU Moodle interface. On the left, there's a sidebar with the Aalborg University logo and links like Dashboard, Calendar, CalMoodle, Course shortcut (with 104 items), Search, and Only courses in progress. Under Only courses in progress, several courses are listed with green checkmarks: 6. semester HA - Sekretariat - F2021; 1 semester - M3 - Firm, Innovation, Sustainability; 1. semester - Mikroøkonomi 1, modul 2 - E2020; 1. semester HA - A - Sekretariat - E2018; and 1. semester HA - A - Sekretariat - E2019. The main area displays five course cards for Business Data Science:

- Cand.Oecon - Applied Deep Learning and Artificial Intelligence - E24**
- MSc BDS 1. semester - Data-Driven Business Modelling and Strategy - E24**
- MSc BDS 1. semester - Introduction to Data Handling, Exploration & Applied Machine Learning - E24**
- MSc BDS 1. semester - Natural Language Processing and Network Analysis - E24**
- MSc BDS 1. semester - Secretariat - E24**



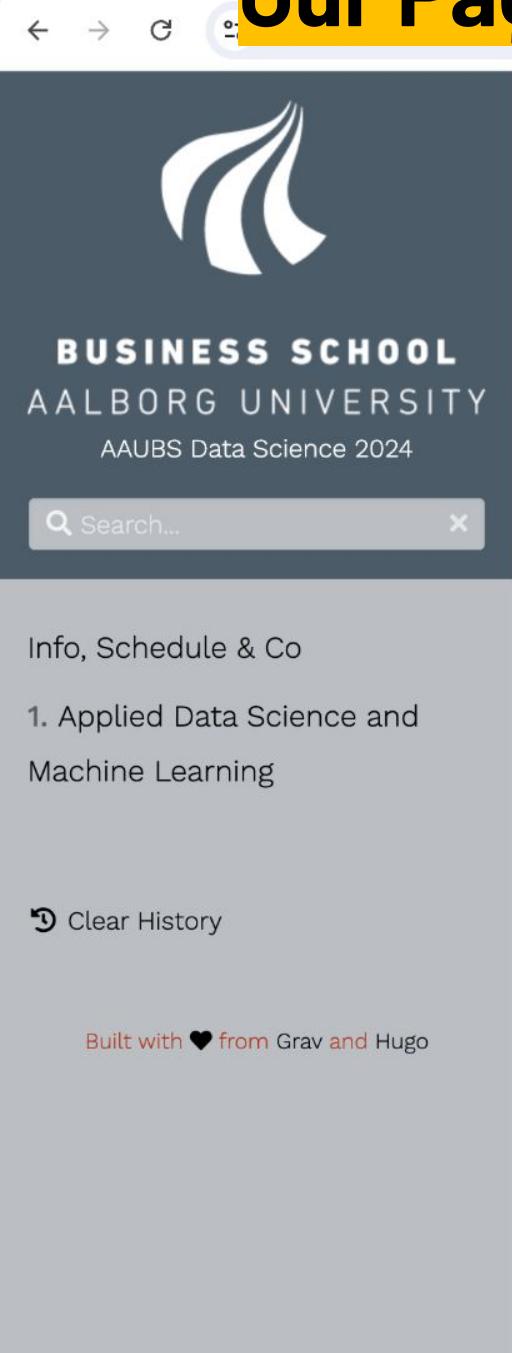
MS Teams

BDS24

ddpjj9j



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The sidebar on the left contains the Aalborg University Business School logo (a stylized white 'A' on a dark blue background), the text "BUSINESS SCHOOL", "AALBORG UNIVERSITY", and "AAUBS Data Science 2024". Below this is a search bar with a magnifying glass icon and the placeholder "Search...". Further down are links for "Info, Schedule & Co", "1. Applied Data Science and Machine Learning", and "Clear History". At the bottom, it says "Built with ❤️ from Grav and Hugo".

SOCIAL & BUSINESS DATA SCIENCE 2024

Aalborg University Business School





HANG IN THERE,
BABY!



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