



CHALMERS

Explorative AI-projects 2025

Comprehensive presentation

Nice to meet you!

Per Olof Arnäs

MSc, Mech Eng 1991-96

PhD student in Logistics 1996-2007

Left for industry 2003

Finished PhD 2006, defended thesis in 2007

TRB Sverige 2003-2010

Transportation industry

Senior Lecturer, 2011-2020, Technology Management and Economics, TME

Faculty Senate 2014-20

Vice Chair 2015-20 – Board member Chalmers Foundation

Vice head of department (Education) 2018-20 (yes, during Covid)

Director Logistics Strategy, Einride 2021-2024

Independent advisor 2024-

Digitalisation advisor to Chalmers (ca 50%)

Secretary General of Game Changing Alliance

Various logistics related work



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Executive summary

24 master
students

10 weeks
during summer
2025

24 explorative
AI-projects

Focus on
central
administration,
education and
upskilling

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Some results so far

635 ideas

60 blog posts

>10 areas of
potential
development

Several
clickable and
working demos

Improved
employer
branding

60+ prototypes

110 stakeholder
interviews

69 videos

Many, many
“unknown
unknowns”
gone

AI and
digitalization
part of the
overall
conversation

AI is evolving fast – and it's accelerating

There is no
"right time" to
start exploring

It cannot be
isolated to an
IT department

If you work in an
office, you are
being disrupted

10% technology
90% culture

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Andreas Jonasson
Head of unit
Research support and
Innovation



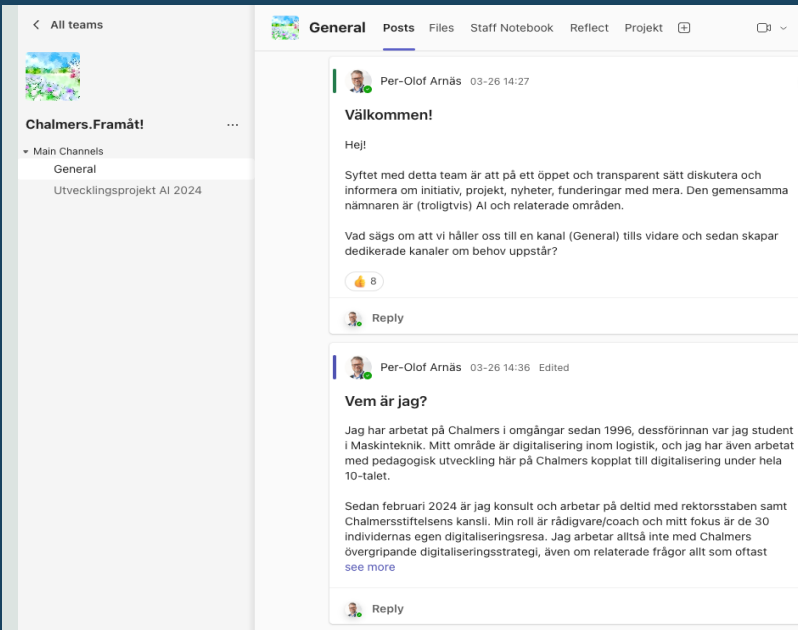
Aidin Fanni
Digitalisation developer



Per Olof Arnäs
Project leader



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Chalmers.Framåt

- Open Team on MS Teams
- "Special Interest Group" on AI, digitalisation etc.
- Discussions
- Inspiration
- Informal
- Please join!



Public web site



Potential areas for continued development

How to copy us

Recruitment

Main challenges

January: Idea generation
February: Consultation
March-May: Recruitment
June: Projects
September: Continuation

Workshop organization, Create realistic projects, Data processing, Validation, Team building, Supervision (academic sense), Evaluation, Re-hiring, Pooling and coordination, Other support

Math Solution Grader

Smart Mailassistant

Nyhetsvärderaren

Tekniken bakom Canvas Summarizer

ResearchBook

Student Twin Studio

Chalmers Social Media Map

Chalmers Life Planning

Research Chat

Research Estimator

Research Tests

Research Analytics

ResearchForms

Slides and other documents

65+ deep dive videos

Working demos*

The wish list



Identify real problems
and opportunities

Play "tight
aggressive" poker

No "mega
projects"

Learn, learn, learn

Involve as
many as
possible

A scenic landscape featuring a winding asphalt road that curves through a valley. In the background, there are rugged, snow-capped mountains under a sky with soft, wispy clouds. The sun is setting or rising, creating a warm glow. A tall, dark evergreen tree stands prominently in the middle ground. To the right, a parking lot with several cars is visible. The overall mood is serene and contemplative.

Unknown unknowns
We need to explore and learn

Known unknowns
We know what we want

Two separate
ways forward
Both are important

Known unknowns



Finished

Proof of Concept
Fabric/Co-Pilot
Test complete

In progress

Smart Travel
Expense app
Demo in August 2025

Beta

Research Grant
Co-pilot
Beta in place at Grants
Office

Beta

Transcription
service
ai.portal.chalmers.se

In progress

Contract Auditing
and Validation
Demo later 2025

Beta

Custom chat bot
chat.portal.chalmers.se

In progress

LLM playground
Demo after summer
break

?

Summer AI projects 2024

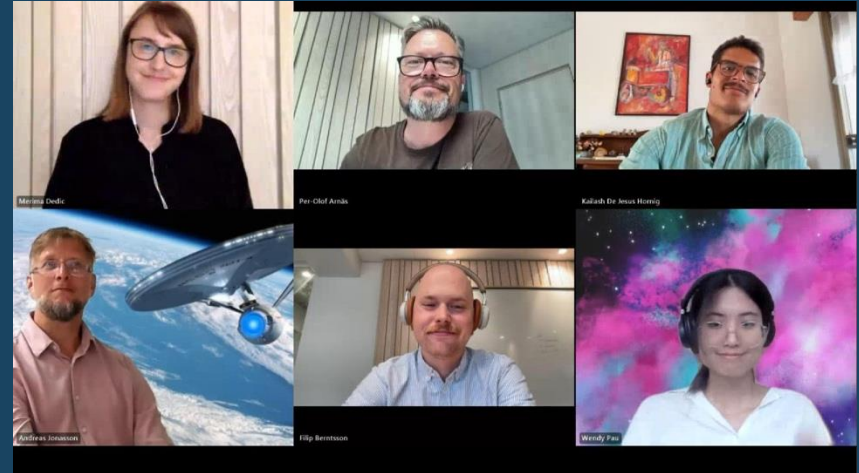


Kailash, Wendy, Merima, Filip

Summer projects 2024



- Four MSc students
- Four AI-related projects
 - Transcribe meetings
 - Scholarships
 - Policy document chatbot
 - Research proposals
- Five weeks (1/7-7/8 2024)
- The students were given simple instructions
 - Run as fast as possible
 - Self organise
 - Take as many shortcuts as you can using AI (e.g. ChatGPT and other tools)
 - Have as much fun as possible
 - Let us debrief you when the internship ends



Summer projects 2024, takeaways

- Their learning curve was extremely steep
 - Especially the last week
- Five weeks were not enough
- Self organisation worked great
 - We ensured a diverse team with complimentary skills and strengths
- We would have benefited from having more colleagues (and stakeholders) in the building
- Involving stakeholders early in the process ensures a “buy in” from the organization as well as a natural dissemination funnel
- The students need to have at least one “coach” or “supervisor” (in the academic sense) to discuss with during the project
- This model would scale quite well

Summer projects 2025

- Scale the model to at least three times the size, 12-16 projects (it turned out to be 24!)
- Extend the project period to up to 10 weeks total
 - Hire individual students for up to 8 weeks, leaving 2 weeks vacation time
 - Spring semester ends 8/6 2025, re-exam period in August usually starts around 15/8
- Ensure a wide engagement throughout the entire support organisation
 - Each of the 8 divisions should contribute with at least 2 projects
- Make sure the projects align with Chalmers' overall strategy

January

Idea
generation

February

Consolidation

March

Recruitment

June

Projects

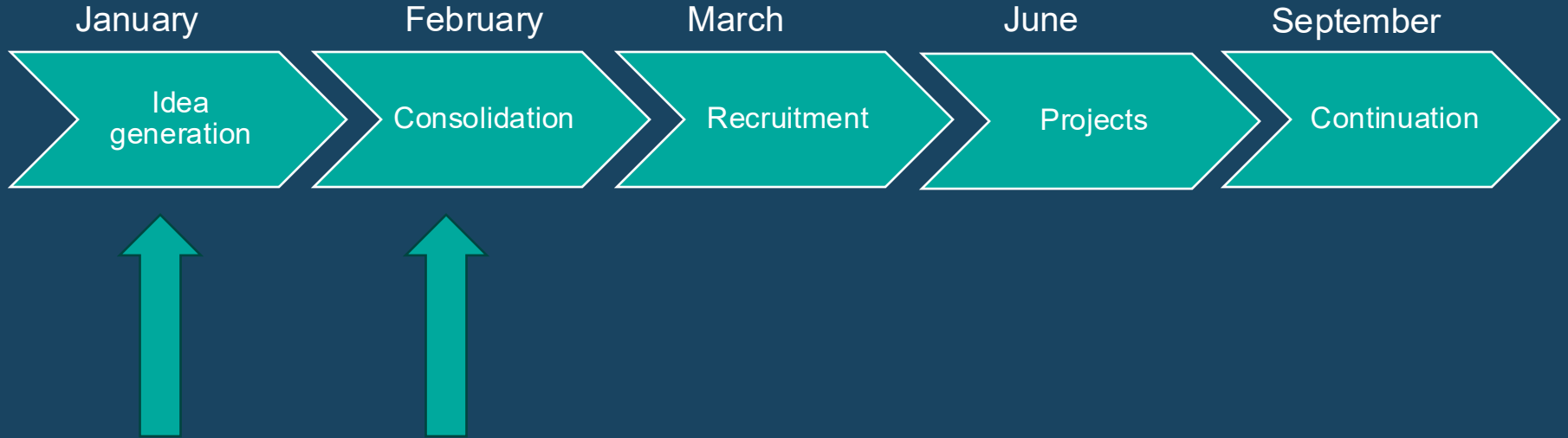
September

Continuation



Explorative AI-projects 2025

Idea generation and consolidation - developing our “starting prompts”



Workshop

- 90 minutes in total
- The purpose is to generate and rank ideas and proposals for summer projects
- Introduction – 10 minutes
- Workshop part 1 – Brainstorm – 30 minutes
- First consolidation/coffee break – 10 minutes
- Workshop part 2 – Ranking – 20 minutes
- Second consolidation – 10 minutes
- Closing remarks – 10 minutes

Intro

Part 1 – Brainstorm

Break

Part 2 - ranking

Consolidation

Closing

Idea generation

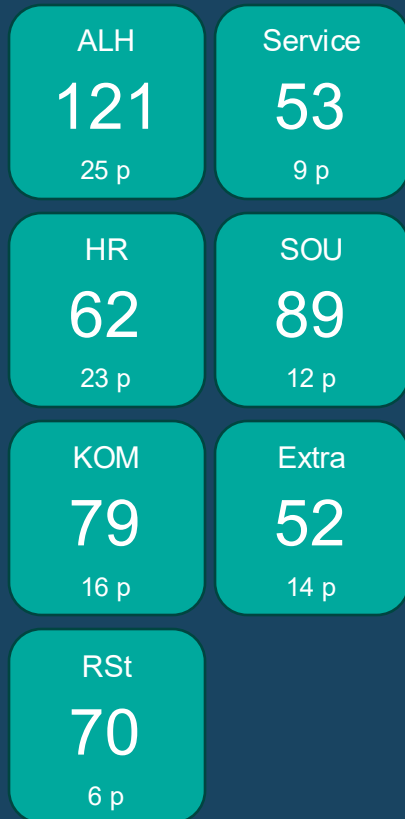


- Generate ideas for summer projects where your division will become a stakeholder
 - Should be related to AI/data science in some way
 - Should not be a new service or product but rather an exploration of an area or problem domain
 - Examples
 - "Would it be possible to use AI to...?"
 - "Given the data we have, what could we do if we...?"
- We want as many ideas as possible
 - At least 2 projects where each division is a stakeholder



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Divisions of the Central Support functions

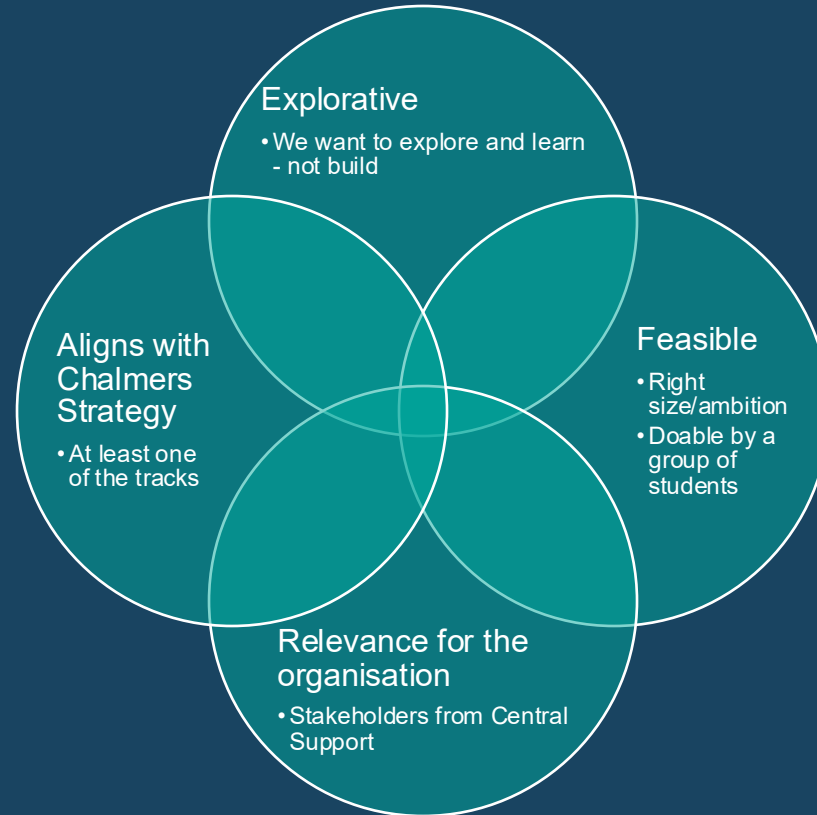


105 persons in workshops

635 ideas!

- AI Assistants & Chatbots (67)
- Administrative Process Automation (48)
- Campus and Site Optimization (19)
- Data Analysis and Decision Support (154)
- Digital Communication and Content Generation (81)
- Document & Contract Management (41)
- Economic Analysis and Forecasts (49)
- HR & Recruitment (31)
- Quality Assurance and Process Improvement (13)
- Meetings and Calendar Integration (27)
- Sensor and IoT-based data management (13)
- System Integration & API Solutions (31)
- Education and Study Planning (49)
- Visual Communication and Presentation Support (12)

Consolidation - criteria





Chalmers' path to the goal

The strategy has four main tracks:

- Track 1: Higher academic quality
- Track 2: Advanced support activities
- Track 3: Own unrestricted base funding within the Group
- Track 4: Exploiting the potential of being a foundation and developing the various operations into a coordinated Group

635 ideas

26 identified projects

16 projects matching criteria

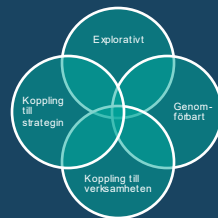
10 others

Already ongoing/planned (6)

Needed but not suitable as student project (2)

Not aligned with needs or strategy (1)

No longer a problem (1)



16 projects

Central support
relevance

DIVISION
Stakeholder
(Primary)

| | | | |
|--------------|--------------|---------------|--------------|
| ALH 8 (6) | HR 7 (2) | ITA 10 (?) | KOM 9 (5) |
| PAE 5 (4) | RSt 6 (4) | Ser 6 (4) | SOU 8 (5) |

Aligned
with
strategy




Chalmers' path to the goal

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- Track 1: Higher academic quality
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2020-01-08

| | |
|--------------|--------------|
| Track 1 (11) | Track 2 (14) |
| Track 3 (9) | Track 4 (4) |

Other stakeholders

| | | | | | |
|---------------------|--------------------------|---------------------------|-------------------------|----------|--------------|
| Student Union 11 | Chalmers Foundation 4 | Chalmers Fastigheter 4 | Chalmers Next Labs 1 | CLS 3 | Faculty 9 |
|---------------------|--------------------------|---------------------------|-------------------------|----------|--------------|

Project portfolio

Results after consolidation

- 4 teams
- 16 students, and projects, in total

Team Smart Campus

Campus API

Data sources from Campus

Open up our digital ecosystem so that others can develop services. This could be, for example, students and employees. It is also a prerequisite for us to be able to work cross-domain.

Campus Manager

Management of properties, service incl material flows, etc.

How can we use data to streamline property service, cleaning, energy management, shared fleet, etc. Actions on campus can make informed decisions (restaurants, property developers, etc.).

Campus Explorer

Services that benefit people on campus

We can develop our own services linked to the campus. Improve the navigation, direct individuals to vacant premises, etc.

Digital Security Guard

Use AI to scan and analyze guard reports and other data sources from a security perspective.

A digital assistant that helps us analyze a large number of evidence from a security perspective. This can be reports from security guards, but also digital traces in the form of connected devices, logins, access cards, etc.

Team Smart Uni

ResearchBook

A social graph of all the world's researchers including publications, employment, etc.

A search service/crawler that can dig fast and soft academic links. This can be about people who did positions together with or other such relationships. It could also be used to create an "intelligence brief" within an individual research field.

Study Buddy

How can AI be used together with Canvas from a student and learning perspective?

A chat-assistant trained on the course material can help students. It can also help those who train with their "Study Buddy" to pass the exam and other examination elements better and achieve the learning objectives.

Smart Alumni Manager

Use AI to create benefits for Chalmers and alumni

We need to explore how AI and digital technology can help us better utilize (and create benefit for) alumni. It can be about collaborations, relationships, donations and more. There is a lot of potential here.

Student.Twin

A "digital twin" of a student to be able to individualize student support.

Is it possible to build a digital twin of a student that allows us to identify potential dropouts early? Can we also identify extremely talented students? There are significantly more data points than just exam results.

Team 10xIndividual

Smart wingman

Help the individual to work smarter in everyday life through automations, smart agents, etc.

Explore opportunities for smart solutions in our existing digital ecosystem. This is expanded to benefit all employees and could address things such as corporate calendar bookings, smart filters in Teams and Outlook, automation, etc.

Second brain

Is there an option to create this functionality on prem.

A digital assistant that helps us think, remember, manage data, sort files, etc. It can be serving to buy and ready-made solutions, but it is also associated with risks. What would be possible to do on your own, maybe even on prem?

Co-author

Using AI to work securely with texts

A collection project for everything that has to do with text generation. It can be news texts, articles, applications, exam questions, etc. How can we guarantee that our internal materials don't end up in the wrong place? How can we ensure that the "Chalmers language" is correct with abbreviations, terms, etc.?

Smart Economy Assistant

What data sources and APIs are there connected to our administrative systems? What can we do with these in terms of automation?

How much can we automate and streamline our administrative systems, especially financial systems? What APIs do we have access to?

Team Data Exploit

Publication data

Exploit data from research.chalmers.se

By "mining" our publication databases, we can identify interesting research based on various criteria. It can be about research/thesis, communication activities, confidentiality needs, etc. Different stakeholders can "subscribe" to data that is relevant to them.

Format Machine

Generate varying content in different formats based on a single piece of information

Given that we have an informational content - can we then create different types of variants automatically? Video, audio, different types of texts in different languages and with different breadth and target group adaptation. The need for this is generic and can be found in several places in the organization, not just at KCM.

River of data

Extract data from different information flows, e.g. for CSRD, news generation, etc.

A collection project for "flowing" data, where we look at opportunities and methods to use AI and digital technology to automate reports, "analytics" and analysis based on different dynamic data flows.

Visualization Expert

Tools and methods for viewing and visualizing data and information, even live

Generate circular calendars, create dashboards that make data visible in different ways.

Project portfolio

Added projects

- 6 (7) teams
 - 4 from the central support functions
 - 1 from Department of Computer Science and Engineering
 - 1 from Chalmers Upskilling Academy
 - 1 from the Industrial Engineering and Management program
- 26 students – and projects – in total!
- Joint recruitment (24)
- Co-location
- Joint onboarding
- Pooling of resources
- Partly joint leadership and supervision

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Team AI Based Feedback

Spoken feedback

Canvas Summarizer

Smart Canvas-assistant

How can AI help teachers build and use better Canvas pages more easily?

The work of standardizing and structuring our digital course rooms to accessibility is a big deal, and not very popular. With good support that makes it easy for course coordinators to do the right thing, a lot would be gained.

Assessment support

How can AI support teachers in their work with marking and assessment, while maintaining or increasing quality, and reducing the amount of work?

The Department of Learning has an explicit goal that all courses will use AI support for marking and assessment by 2026! Assignments, scanned exams, transcribed presentations, recordings, ...

Smart Project Tutoring

How can AI improve the quality of supervision in project work?

Project courses are more costly in terms of resources, or limited in terms of opportunities for supervision and feedback. Student TAs have limited capacity and knowledge. Can AI help supervisors (and students?) in project courses, by assisting with continuous feedback and assessment support?

Quality Assurance

How can AI simplify and improve the systematic quality assurance work for courses and course evaluations?

Support programme managers, study coordinators and examiners to get more out of the quality assurance process around courses, and all the data that is generated and stored.

Team Upskill

Funded by Chalmers Upskilling Academy

Skills Matching & Assessments

AI to match knowledge gaps with continuing education

As supported building of knowledge gaps among professional engineers in industry. Matching all individual and group level between knowledge needs and target of continuing education from Chalmers Upskilling Academy.

Upskilling industry

Smart platform for upskilling industry

AI support platform for Chalmers Upskilling Academy that can deliver hundreds of upskilling modules and learning paths to thousands of engineers in industry.

Skill Credits & Communities

Smart credits management

AI for distribution, management and analysis of who can do what after upskilling at Chalmers Upskilling Academy. Smart management of Communities. Support for Chalmers future talent pool.

Forecasting & Tech radar

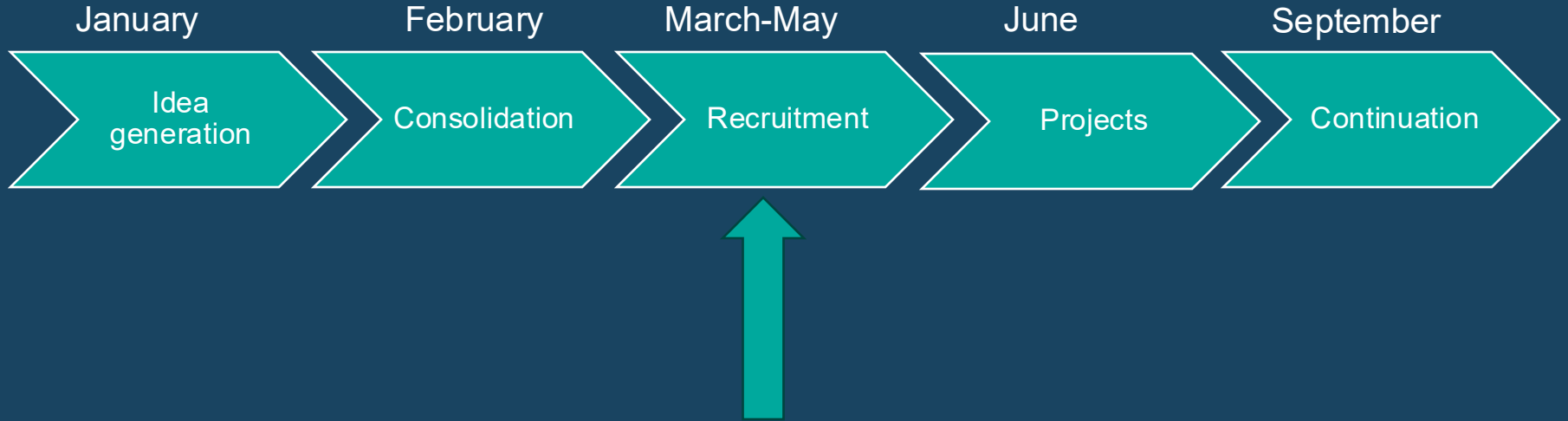
AI-supported future scouting

On-demand intelligence briefing future scouting. Input to keep the learning modules state-of-the-art. Coordination with Chalmers Areas of Advance



Explorative AI-projects 2025

Recruitment – experiment using AI



Recruitment



Lediga tjänster



Sommarjobb: Digitalisera och tillämpa AI-lösningar på Chalmers

REF 2025-0120



Vill du arbeta med digitalisering och AI för att skapa konkreta lösningar som gör skillnad? Vi söker nu sommarmedarbetare till 20-talet miniprojekt, där vi utforskar AI:s potential inom olika verksamhetsområden på Chalmers. Projektet är explorativa till sin natur, vilket innebär att vi inte letar efter färdiga lösningar utan snarare vill undersöka vad som är möjligt och lära oss längs vägen.

Våra projekt är indelade i flera breda områden, inklusive:

- **AI-assistent**er och **chatbots** – utveckla interaktiva AI-lösningar som kan hjälpa studenter och anställda att navigera i information och interna system.
- **Automatisering av administrativa processer** – effektivisera arbetsflöden genom att utveckla AI-lösningar för hantering av dokument, rekrytering och ekonomiska processer.
- **Dataanalys och beslutsstöd** – skapa AI-modeller för att analysera stora datamängder och ge insikter som kan användas för strategiskt beslutsfattande.
- **Digital kommunikation och innehållsgenerering** – utveckla AI-baserade verktyg för att skapa och förbättra texter, nyheter och visuellt material.
- **Campus- och platsoptimering** – arbeta med AI-lösningar för att optimera användningen av lokaler, resurser och planering på campus.

- Ad active 30 days
- This is also an AI experiment
 - No cover letters
 - More than 50 questions
 - Many of them of essay type normally asked during interview
- 275 applications!
- We are using AI as a decision support during this process

Urvalsfrågor

👁️ Visa detaljerad vy

Finns du på LinkedIn? Ange gärna din profilänk i så fall.

Ansökningsförfarande

För denna tjänst ska du inte bifoga ett personligt brev. Ansökan sker genom att svara på de frågor som anges i annonsen.

Personuppgifter och AI

I den här ansökningsprocessen använder vi AI-teknik (LLM) för att stödja vår beslutsprocess baserat på de svar du ger nedan. Vi anonymiserar data i denna process, men om du anger personuppgifter i fritextsvaren nedan så kan dessa ingå i analysen. Du kan läsa mer om dina rättigheter och hur du kontaktar oss för att utöva dem på vår hemsida [chalmers.se/om-chalmers/om-webbplatsen/hantering-av-personuppgifter/].

Tillgänglighet och platsnärvaro

Vi kommer att samllokalisera samtliga sommaranställda och strävar efter att få en stark fysisk arbetsmiljö som faciliterar dialog och samarbeten mellan enskilda projekt. Det är därför viktigt att alla har möjlighet att vara fysiskt på plats under projektiden.

Bekräfta att du är tillgänglig under perioden 9/6–15/8, med undantag för maximalt två veckor (dock inte första veckan, då alla behöver vara på plats).*

- Ja, jag är tillgänglig under denna period
- Nej, jag är inte tillgänglig

Bekräfta att du kan vara på plats fysiskt under perioden.*

- Ja, jag kan vara på plats fysiskt på Chalmers under perioden
- Nej, jag kommer inte att kunna vara på plats fysiskt under arbetsperioden

Här kan du kommentera din tillgänglighet om nödvändigt

Grundläggande bakgrundsinformation

Här vill vi veta lite mer om dig, din bagrund, utbildning mm

Var studerar du just nu?*

- Chalmers
- GU
- Annat lärosäte

AI in recruitment



| ID | Question 1 | Question 2 | Question 3 |
|----|------------|------------|------------|
| 1 | | | |
| 2 | | | |

← 1. Prompt each candidate

- Create new columns based on response
- This is automated

↑
2. Prompt the entire table

- Identify team constellations
- Find the right candidate for specific role

AI in recruitment – prompt example

You are a recruiter for a selective summer program in AI and digitalization at a technical university.

The candidates are students who have answered a number of free-text questions.

You now have access to a candidate's complete answers.

Task:

Analyze the text and identify the qualities, experiences or perspectives that ****stand out**** – i.e. things that make the candidate extra interesting, unique or memorable.

Consider both ***positive qualities*** (such as particular technical level, experience, curiosity, collaboration skills) and ***unique perspectives*** (such as unusual backgrounds, unusual AI application, exceptional motivation, etc.)

AI in recruitment – prompt example



The same prompt is sent to two separate LLMs



Here is an analysis of the candidate's profile focusing on what stands out and particularly interesting/beneficial qualities, experiences and perspectives:
1. Interdisciplinary experience and collaborative skills
The candidate has a very strong and concretely documented interdisciplinary background. She has collaborated with people from systems science, technical design, cybersecurity, finance, bakery and the healthcare sector. This demonstrates the ability to communicate and work effectively across subject and expert boundaries and also appreciate the value of different perspectives – an important quality
.....



Based on the detailed analysis, here are the main characteristics that stand out in this candidate:\n\n ✨ Unique Strengths:
Interdisciplinary profile
- Collaborated in teams with extremely diverse backgrounds
- Ability to communicate across disciplinary boundaries
- Sees diversity as a strength for problem-solving
2. Ethical & Reflected AI Understanding
- Deep insight into the ethical dimensions of AI
- Critical perspective on bias and transparency
- Not just technical implementation but societal impact\n\n3. Pedagogical communication skills
- Can explain complex technology to children and adults
.....

The responses are then compared by a third model and a consensus is formed, together with an analysis of any differences between the models



The analysis suggests that the candidate is exceptionally strong when it comes to interdisciplinary experience and collaboration skills, reflective and conscious attitude to the ethical dimensions of AI, the ability to concretize and explain complex technologies to others, motivated by learning and curiosity about human-technology interaction, the ability to create one's own AI improvement proposals and personal user experience, independence, initiative-taking and structural work, self-awareness and openness, as well as project management experience. The candidate's strengths thus lie in a combination of technical depth, reflective awareness of ethical dimensions, complex technology explanation, motivation for learning, independent work and project management.

Consensus score 0.95

(All were validated manually)

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Consider both "positive qualities" (such as particular technical level, experience, curiosity, collaboration skills) and "unique perspectives" (such as unusual backgrounds, unusual AI application, exceptional motivation, etc.)

Interviews

- 48 candidates
- 10 minutes via Teams
- Everyone got the same questions
 - Which current AI trend do you think is most overrated – and why?
 - If you were given 60 seconds to pitch an AI idea for an investor, what would you say?
 - You get 20 000 Euro to further develop your idea. The investor gives you one week to do this. If they like what they see after one week, you will get 2 000 000 Euro. What do you do?
- We are putting cross disciplinary teams together. What role do you take in such a team?
- If time: One or two questions based on their application
- The interviews together with the written material gave us a good overview of the applicants

Teams

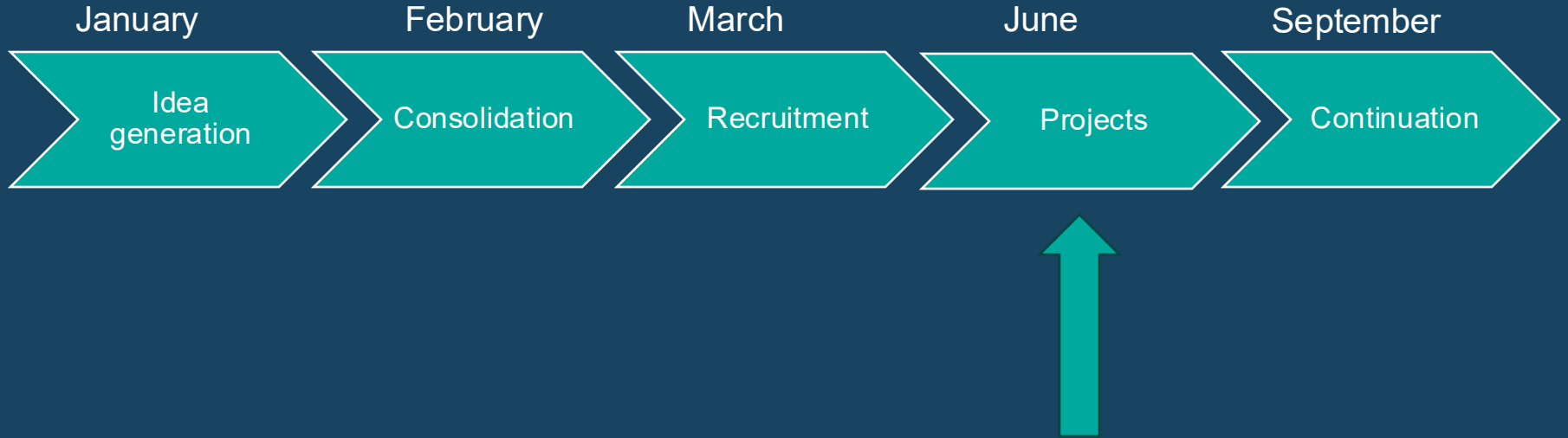
- Chalmers (66%), Gothenburg University (33%)
- Many different backgrounds
- Many different nationalities
- Many different education programs
- Even split M/F
- Each team is built like a startup with combinations of
 - Developers
 - Creatives
 - Organizers
 - Domain experts





Explorative AI-projects 2025

Execution – from kick-off to send-off



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Team Smart Campus

Campus API

Data sources from Campus

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Campus Manager

Management of properties, service incl material flows, etc.

Here we can use data to streamline property service, cleaning, energy management, material flows, etc. Actors on campus can make informed decisions (restaurants, property developers, etc.).

Campus Explorer

Services that benefit people on campus

We can develop our own services linked to the campus. Improve the navigator, direct individuals to vacant premises, etc.

Digital Security Guard

Use AI to scan and analyze guard reports and other data sources from a security perspective.

A digital assistant that helps us analyze a large number of variables from a security perspective. This can be reports from security guards, but also digital traces in the form of connected devices, logins, access cards, etc.



Team Smart Uni

ResearchBook

A social graph of all the world's researchers including publications, employment, etc.

A search service/crawler that can find hard and soft academic links. This can be about people who did postdocs together with or other soft relationships. It could also be used to create an "intelligence brief" within an individual research field.

Study Buddy

How can AI be used together with Canvas from a student and learning perspective?

A chatbot/assistant trained on the course material can help students. It can also help those who train with their "study buddy" to pass the exam and other examination elements better and achieve the learning objectives.

Smart Alumni Manager

Use AI to create benefits for Chalmers and alumni

We need to explore how AI and digital technology can help us better utilize (and create benefit for) alumni. It can be about collaborations, relationships, donations and more. There is a lot of potential here.

Student.Twin

A "digital twin" of a student to be able to individualize student support.

Is it possible to build a digital twin of a student that allows us to identify potential dropouts early? Can we also identify extremely talented students? There are significantly more data points than just exam results.



Team 10xIndividual

Smart wingman

Help the individual to work smarter in everyday life through automations, smart agents, etc.

Explore opportunities for smart solutions in our existing digital ecosystem. This is expected to benefit all employees and could address things such as complex calendar bookings, smart filters in Teams and Outlook, automations, etc.

Second brain

Is there an option to create this functionality on prem.

A digital assistant that helps us think, remember, manage data, sort data, etc. It can be tempting to buy a ready-made solution, but it is also associated with risks. What would be possible to do on your own, maybe even on prem?

Co-author

Using Ai to work securely with texts

A collection project for everything that has to do with text generation. It can be news texts, articles, applications, exam questions, etc. How can we guarantee that our internal materials don't end up in the wrong place? How can we ensure that the "Chalmers language" is correct with abbreviations, terms, etc.?

Smart Economy Assistant

What data sources and APIs are there connected to our administrative systems? What can we do with these in terms of automation?

How much can we automate and streamline our administrative systems, especially financial systems? What APIs do we have access to?



Team Data Exploit

Publication data

Exploit data from research.chalmers.se

By "sniffing" our publication database, we can identify interesting research based on various criteria. It can be about newsworthiness, commercialization potential, confidentiality needs, etc. Different stakeholders can "subscribe" to data that is relevant to them.

Format Machine

Generate varying content in different formats based on a single piece of information

Given that we have an informational content - can we then create different types of variants automatically? Video, audio, different types of texts in different languages and with different tonality and target group adaptation. The need for this is generic and can be found in several places in the organization, not just at KOM.

River of data

Extract data from different information flows, e.g. for CSRD, news generation, etc.

A collection project for "flowing" data, where we look at opportunities and methods to use AI and digital technology to automate reports, "snapshots" and analyses based on different dynamic data flows.

Visualization Expert

Tools and methods for viewing and visualizing data and information, even live

Generate circular calendars, create dashboards that make data visible in different ways.



Team Education

Funded by the Department of Computer Science and Engineering

Smart Canvas- assistant

How can AI help teachers build and use better Canvas pages more easily?

The work of standardizing and adapting our digital course rooms to accessibility is a big deal, and not very popular. With good support that makes it easy for course coordinators to do the right thing, a lot would be gained.

Assessment support

How can AI support examiners in their work with marking and assessment, while maintaining or increasing quality, and reducing the amount of work?

The Department of Law has an explicit goal that all courses will use AI support for marking and assessment by 2025(!). Assignments, scanned exams, transcribed presentations, recordings, ...

Smart Project Tutoring

How can AI improve the quality of supervision in project work?

Project courses are more costly in terms of resources, or limited in terms of opportunities for supervision and feedback. Student TAs have limited capacity and knowledge. Can AI help supervisors (and students?) in project courses, by assisting with continuous feedback and assessment support?

Quality Assurance

How can AI simplify and improve the systematic quality assurance work for courses and course evaluations?

Support programme managers, study counsellors and examiners to get more out of the quality assurance process around courses, and all the data that is generated and stored.



Team Upskill

Funded by Chalmers Upskilling Academy

Skills Matching & Assessments

AI to match knowledge gaps with continuing education

AI-supported matching of knowledge gaps among professional engineers in industry. Matching at individual and group level between knowledge needs and range of upskilling modules from Chalmers Upskilling Academy.

Upskilling industry

Smart platform for upskilling

AI support platform for Chalmers Upskilling Academy that can deliver hundreds of upskilling modules and learning paths to thousands of engineers in industry.

Coordination and APIs for Canvas and Canvas Catalogue.
Integration and APIs for Enterprise Learning Management Systems

Skill Credits & Communities

Smart credits management

AI for distribution, management and analysis of who can do what after upskilling at Chalmers Upskilling Academy. Smart management of Communities. Support for Chalmers' future talent pool.

Forecasting & Tech radar

AI-supported future scouting

On-demand-intelligence-briefing Future scouting. Input to keep the training modules state-of-the-art. Coordination with Chalmers Areas of Advance



First week

Monday

Practical onboarding:

Pass card

Accounts and logins

Intro to office building

Tuesday

Meeting with each team (90 min):

Expectations

Instructions

“Starting prompt”

Wednesday

Kick-off:

Students + stakeholders + management etc.

External inspirational speakers

Thursday

Lectures/sessions:

Security

Data protection

IT environment

Etc.

Friday

Lectures

Intro meetings with stakeholders

First blog post

After Work gathering (voluntary)

Weeks 2-8

Monday

Check-in
(everybody)

Tuesday

Wednesday

External guest (60
min):

Expert

Researcher

Lecturer

Etc.

Thursday

Friday

All teams write a
“blog post” in the
public Teams
Channel

Each team
writes a blog
post every
Friday

Sommarprojekt AI 2025 Posts Files Notes

VW Victoria Wallenfeldt 06-13 15:07



Team Upskill – Första veckan i sommarprojekt explorative AI

Vi är *Team Upskill* – en kvartett med stora visioner, mycket kaffe och en stark tro på att artificiell intelligens kan hjälpa oss lösa en av industrins utmaningar: **kompetensgapet**. Hur ser man till att ingenjörers kunskaper matchar framtidens behov? Och hur kan vi använda AI för att stötta både individer och organisationer i att hitta rätt väg framåt?

Vi samarbetar med Chalmers Upskilling Academy för att utforska AI-system för:

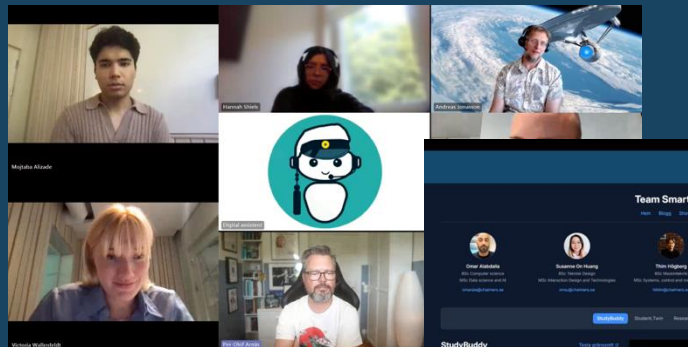
- **Chille Matchins**

[see more](#)



[Start a post](#)

Weeks 9-10



Smart Mailassistent

- Hur vet programmet att ett inkommet mail är en vanlig fråga?
 - Genom att träna en AI på existerande mejl (likt hur spamhantering fungerar)
- Hur genereras svar?
 - Genom en AI som tränats på dina mail. På så sätt är de även anpassade efter ditt skrivsätt

2025-09-11

2025-09-11

Team Smart

2025-09-11

Tekniken bakom Canvas Summarizer

- LTI-app (Learning tools interoperability)
- Körs externt på en ubuntumaskin
- Hämtar data med både LTI och canvas API
- Kallar på LLM-er via LiteLLM, kör gpt 4.1 i nuläget

2025-09-14

Nyhetsvärderaren

Genererar sammanfattningar och nyhetsbedömningar utifrån forskningsartiklar.

Monday

Check-in (everybody)

Video interviews

Tuesday

Video interviews

Wednesday

Video interviews

Thursday

Video interviews

Friday

All teams write a final blog post on the public Teams Channel

Some results so far

635 ideas

60 blog posts

>10 areas of
potential
development

Several
clickable and
working demos

Improved
employer
branding

60+ prototypes

110 stakeholder
interviews

69 videos

Many, many
“unknown
unknowns”
gone

AI and
digitalization
part of the
overall
conversation

Team Smart Campus - prototypes

Digital security guard

Campus activity heat map

Service flow

Room usage predictor

Campus Restaurant Sim

Virtual Campus

Campus activity forecaster

Energy predictor

Pathfinder

Campus Flow – visualize movement

Tourist guide

Campus Vision



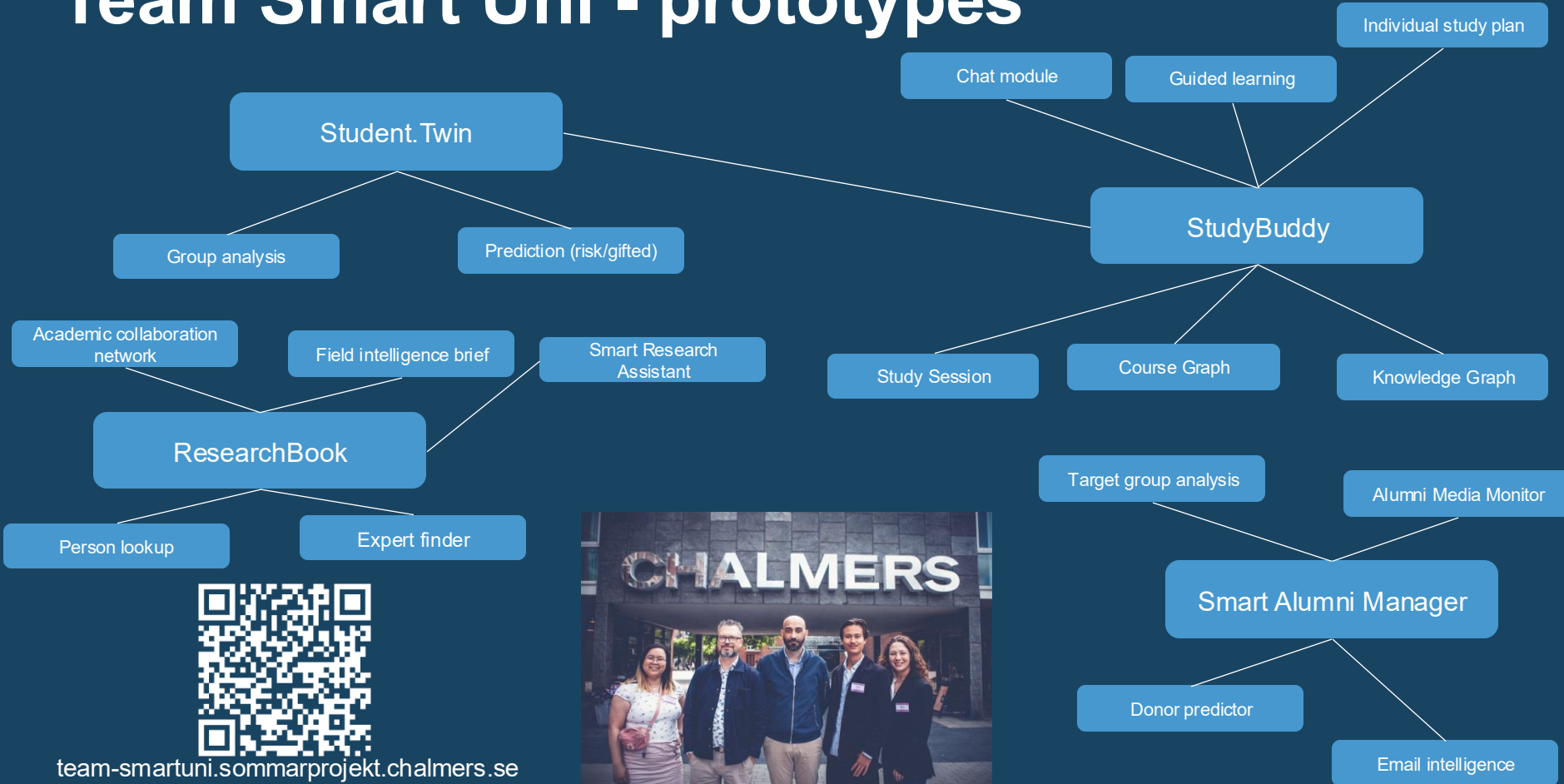
team-campus.sommarprojekt.chalmers.se



Chalmers GO

Ghostbuster

Team Smart Uni - prototypes



team-smartuni.sommarprojekt.chalmers.se



May require VPN

Team 10xIndividual - prototypes

Smart Email Assistant

Chalmers Writing
Assistant

AI coordinated
recruitment processes

Automatic time reporting

CHAL – Chatbot in
Teams

Letter of Intent generator



team-10xindividual.sommarprojekt.chalmers.se

May require VPN



Team Data Exploit - prototypes

Social Media Text
Transformer

Chalmers Social Media
Map

News Evaluator

Text-to-speech

Research chatbot

Chalmers Life Journey

Text-to-image



team-dataexploit.sommarprojekt.chalmers.se

May require VPN



Text-to-video

Team Education - prototypes

Assessment support -
text

Find golden nuggets in
courses

Quality Assurance tool

Assessment support -
math

FLOW – discussion
facilitator

Canvas Template Library

Smart Tutoring

Oral exam tool



team-education.sommarprojekt.chalmers.se

May require VPN



Team Upskill – prototypes

Skills Compass

Skill credits &
communities

Knowledge Graph

Upskilling Platform

Forecasting & Tech
radar

Smart Course Creator



team-upskill.sommarprojekt.chalmers.se

May require VPN



Team AI based feedback – prototypes

Canvas Summarizer

Oral feedback in Canvas

Team AI-baserad feedback

- Om oss: 21 år och har studerat två år på Industriell Ekonomi M.Sc, Chalmers
- Projekt 1: Dashboard i canvas som visar statistik för en kurs med integrerad AI-chatt
- Projekt 2: Transkriptionstjänst och integrerad AI i canvas rättningsystem.
- Explorativt arbete utifrån två startprompts.
- Beställare och arbetsgivare är Henrik Berglund, Programansvarig Industriell Ekonomi.



Oscar Sandebert



Olle Knutsson



Explorative AI-projects 2025

Tools and services used

Tech stack

Commercial services

Services we pay for, often per account per month or per usage volume

Local installations

Services we install locally, often open source but takes time/effort to install and maintain

LLM

ChatGPT
Claude
Copilot

Sana.ai
OpenAI API
Anthropic API

LiteLLM
Open WebUI
Ollama (20+ models)

KB Whisper

Coding

Claude Code
Lovable
Replit

AWS Bedrock
Cursor
Github

Other services

Elevenlabs
Heygen
Neo4j

Figma
RunwayML
Descript

n8n
Canvas
Docker containers

Demo server

250 000 SEK / 25 000 €
Low fixed cost, high variable cost

140 000 SEK / 14 000 €
High fixed cost, low variable cost

Cost is calculated for the whole summer (10 weeks)
16 250 SEK / 1600 € per project or 6 500 SEK / 650 € per prototype



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Explorative AI-projects 2025

Exploitation of results and continuation

January

Idea
generation

February

Consolidation

March-May

Recruitment

June

Projects

September

Continuation



Known unknowns



Finished

Proof of Concept
Fabric/Co-Pilot
Test complete

In progress

Smart Travel
Expense app
Demo in August 2025

Beta

Research Grant
Co-pilot
Beta in place at Grants
Office

Beta

Transcription
service
ai.portal.chalmers.se

In progress

Contract Auditing
and Validation
Demo later 2025

Beta

Custom chat bot
chat.portal.chalmers.se

In progress

LLM playground
Demo after summer
break

This is where
we can
accelerate!

Continue the work - evaluation

Impact

Does it contribute to our digital transformation?

Scope

Is it potentially useful for the whole organisation or just a few individuals?

Challenge

Would implementing be difficult?

Are there still unknown unknowns?

Cost

Is it expensive?

Development, scale up, operation, licensing etc.

Continue the work - clustering



Teachers

Alumni

Student support

Canvas templates

Quality Assurance

Student.Twin

Upskilling Platform

Canvas Summarizer

Smart project tutoring

Smart course creator

Assessment support

Voice based feedback

FLOW

Oral exam tool

Knowledge graph

Skills Compass

StudyBuddy

Upskilling

Education leadership

Students

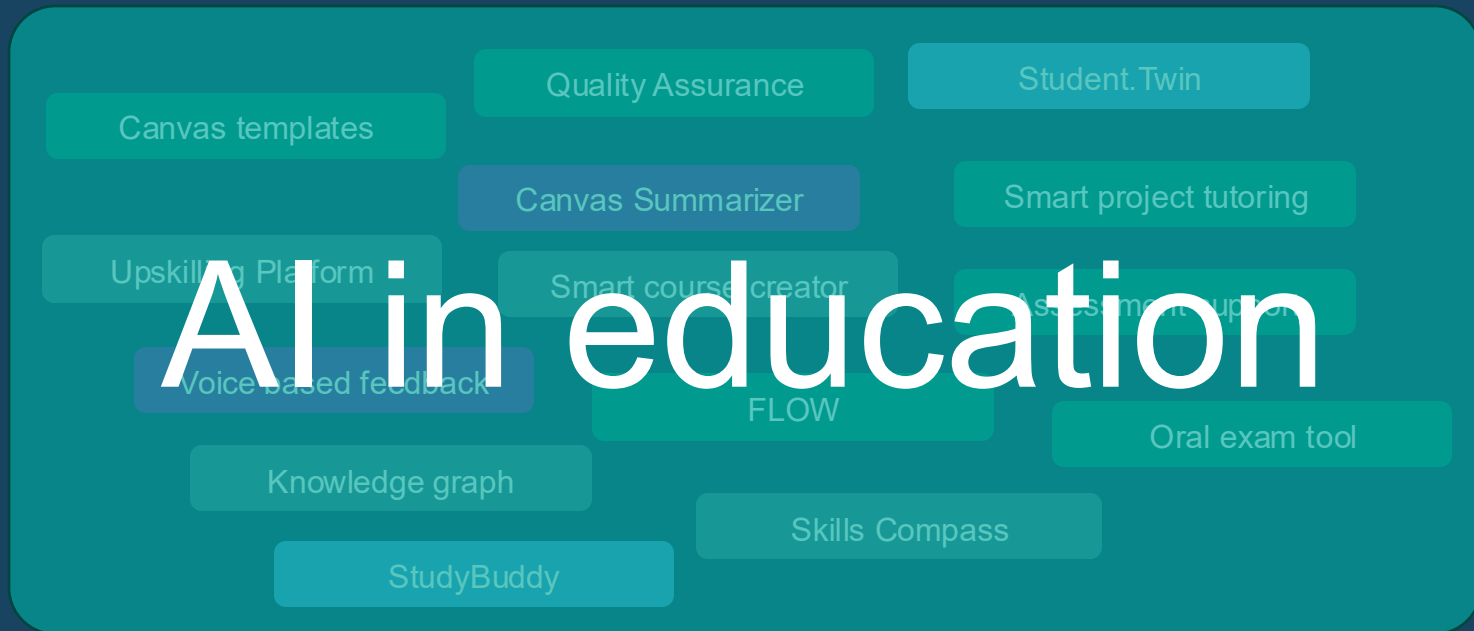
Continue the work - clustering



Teachers

Alumni

Student support



Upskilling

Education leadership

Students

Some potential large clusters



AI in education

Personal
productivity

Exploit
Chalmers
Research
database

Smart Campus

Some smaller potential clusters

Content generation

Content processing

Marketing and external
communication

Deep research support

Alumni management

On prem AI services

Potential areas for continued development



AI in education

Personal productivity

Exploit Chalmers Research database

Smart Campus

Content generation

Content processing

Marketing and external communication

Deep research support

Alumni management

On prem AI services

Potential areas for continued development



Many generic needs

AI in education

LLM access

Personal productivity

Development framework

Exploit
Char
Research
database

Education of staff

Smart Campus

Data access

Content generation

Content processing

System access

Fine tuning models

Marketing and external communication

Deep research support

Graph database technology

Alumni management

Etc.

Frontend framework

On prem AI services

Organisation



Coordination



Developers



Stakeholders

Pool of talent

Students (20% of full-time)



Potential tasks for the students

Development

Central projects
Stakeholder
driven projects
(No mega
projects!)

Innovation support

Continue
explorative work
where needed

Education

Study circles in
digital prototyping

Learn Lovable/
Replit

Data processing

Fine-tuning of
models

Prepare data for
AI

?

Managing principles



Central coordination

Make sure we get the best overall effect

Pooling

Find and exploit synergies

Employed centrally

IT department is formal employer

Keep the cohort together

Enable network effect (bi-weekly syncs etc.)

Tech lead by IT department

In compliance with our dev principles

“Hire out” locally

When needed, 2 or more students can work locally

No solitary students

At least 2 persons per task

Max 20% for students

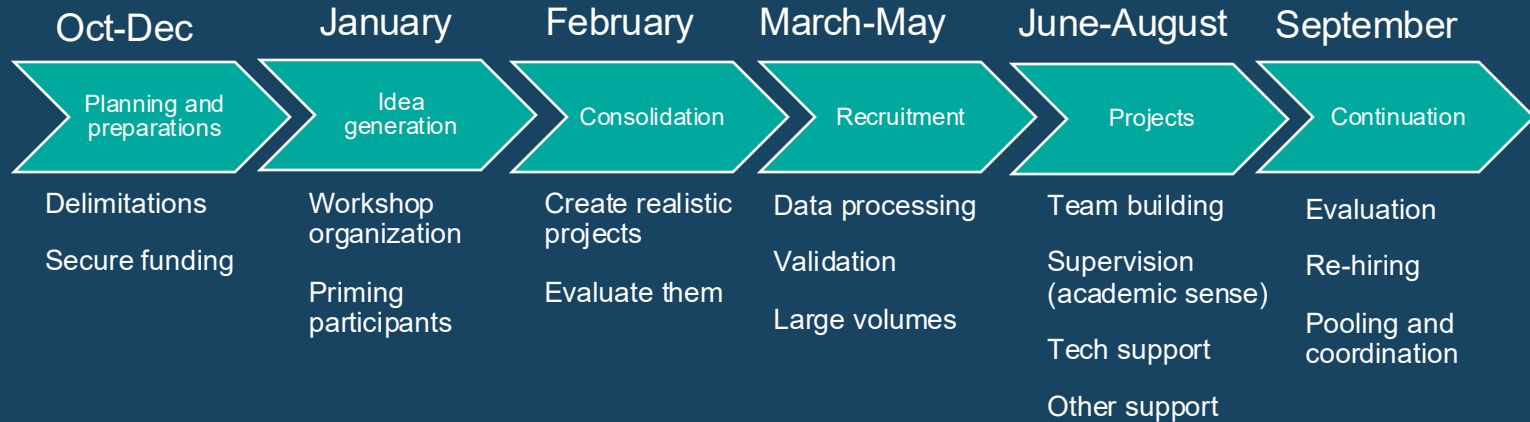
Students are not allowed more than 20%



Explorative AI-projects 2025

Main learnings and takeaways

Main challenges



Cost so far

Cost

Per project

24 projects

Per prototype

60 prototypes

Before summer

Personnel

800 000 SEK / 80 000 €

33 000 SEK / 3 300 €

13 000 SEK / 1 300 €

17%

Workshops

130 000 SEK / 13 000 €

5 400 SEK / 540 €

2 200 SEK / 220 €

3%

During summer

Wages, students

2 600 000 SEK / 260 000 €

87 000 SEK / 8 700 €

35 000 SEK / 3 500 €

57%

Personnel

700 000 SEK / 70 000 €

29 000 SEK / 2 900 €

12 000 SEK / 1 200 €

15%

Tech

390 000 SEK / 39 000 €

16 000 SEK / 1 600 €

6 500 SEK / 650 €

8%

Total

4 620 000 SEK / 462 000 €

192 000 SEK / 19 200 €

77 000 SEK / 7 700 €

Main takeaways – things to keep

10 weeks

Enables
2-3 loops

Max 24
students

Network
effect optimal

Abundance of
services

High cost/
benefit ratio

Central
location

Max visibility

AI in
recruitment

Large
potential

Supervision

“Academic”
supervision

Teams of 4

Make sure
each team is
cross-
disciplinary

Stakeholder
involvement

Ongoing work
all year

Video
interviews

Leverage AI in
content
production etc.

Team building

Kick-off

Lectures and
standups

Social events

Keep alumni
next year

Re-hire all
who want to
come back
next time

Blog posts

Low friction
engagement

Main takeaways – things to change

Accounts for services

Pre-register

Local installations

Pre-install

Communication plan

Make sure you have it ready before project start

Support availability

Ensure capacity during summer

Flexible budget

Make sure you have flexibility during the projects

Data sources

Gather data before start

Ensure funding

Ensure funding for continuation before start

Payment method

Credit card access

Supervisor availability

Ensure capacity during summer

Produce videos during

Continuous video documentation

← Before the projects start → ← During summer →

How to copy us

Strategic compass, know your “why”

Top management support

Absolutely crucial

Ensure funding beforehand

Ensure engagement

Management team

Technical skills

Organisational skills

Networking skills

Solution driven attitude

Organisation engagement

Communication, communication, communication

Explorative mindset

Point - do not lead

It's all about learning

Some results so far

635 ideas

60 blog posts

>10 areas of
potential
development

Several
clickable and
working demos

Improved
employer
branding

60+ prototypes

110 stakeholder
interviews

69 videos

Many, many
“unknown
unknowns”
gone

AI and
digitalization
part of the
overall
conversation

Public web site



Potential areas for continued development

How to copy us

Recruitment

Main challenges

January: Idea generation
February: Consultation
March-May: Recruitment
June: Projects
September: Continuation

Workshop organization, Create realistic projects, Data processing, Validation, Team building, Supervision (academic sense), Evaluation, Re-hiring, Pooling and coordination, Other support

Math Solution Grader

Smart Mailassistant

Nyhetsvärderaren

Tekniken bakom Canvas Summarizer

ResearchBook

Student Twin Studio

Chalmers Social Media Map

Chalmers Life Planning

Research Chat

Research Estimator

Research Tests

Research Analytics

ResearchForms

Slides and other documents

65+ deep dive videos

Working demos*



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Version history



| Version | Date | Description | Who? |
|---------|------------|---|----------------|
| 1.0 | 2025-09-10 | First version | Per Olof Arnäs |
| 1.1 | 2025-09-17 | Added slides of prototypes | Per Olof Arnäs |
| 1.2 | 2025-09-26 | Added version history Smaller fixes | Per Olof Arnäs |
| 1.3 | 2025-10-15 | Added QR-codes to prototypes, minor fixes | Per Olof Arnäs |
| 1.4 | 2025-10-24 | Corrected total cost calculation | Per Olof Arnäs |