



ESIEM

EUROPEAN SCHOOL OF
INDUSTRIAL ENGINEERING
& MANAGEMENT

The Foundation European Academy for Industrial Management

Giovanni Mummolo

President of Foundation ESIEM



Vision & Mission

Vision

Affirm the Strategic role of Human Capital for worldwide Competitiveness of European Companies consistently with the Knowledge Strategy of the European Commission with **Society at the Centre**.

Mission

Promote and support **Innovative Higher Education** in Industrial Engineering and Management in full synergy with HEIs, companies, and public/private institutions across Europe.



The European School of Industrial Engineering and Management

(<https://www.esiem.eu/esiem/>)

"Non Scholae sed Vitae Discimus"
Seneca, *Epistulae morales ad Lucilium*,
XVII–XVIII, 106, 12

Legal Entity: Participatory Foundation

Funded by Financial Italian State Law (n. 197, 29.12.2022)

Site Location: Polytechnic University of Bari

Statutory Members

- Italian and European Universities & Companies
 - Public Authorities
- Academic / Industry Associations

- ***Polytechnic University of Bari – Founding Member***

Supporting Members and representatives in ESIEM

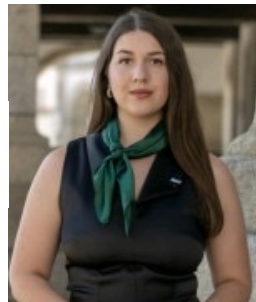


- ***European Academy for Industrial Management – AIM***

Prof. Filippo Ciarapica

Polytechnic University of Marche

- ***European Students of Industrial Engineering and Management – ESTIEM***



ESTIEM

Miss Teodora Maric

VP President Education of ESTIEM

University of Novi Sad

Scientific Committee



Emilio Ferrari

SCIENTIFIC COMMITTEE

Emilio Ferrari is Full Professor in Industrial Plants and Logistics at the University of Bologna with interest in Industry 4.0 innovations.



Joaquín Ordieres Meré

SCIENTIFIC COMMITTEE

Joaquín Ordieres Meré is Full Professor at Universidad Politécnica de Madrid with expertise in AI, Industry 4.0, Knowledge Management and Lean.



Francesco Paolo Sisto

SCIENTIFIC COMMITTEE

Francesco Paolo Sisto is an Attorney and Cassation Lawyer from Bari, specializing in criminal liability and workplace health and safety law.



Marco Sartor

SCIENTIFIC COMMITTEE

Marco Sartor is Full Professor at the University of Udine with expertise in Supply Chain Management, Purchasing and Operations Management.



Hendrik René Georges Van Landeghem

SCIENTIFIC COMMITTEE

Hendrik Van Landeghem is Professor Emeritus at Ghent University, specializing in Lean Management, Production Planning and Operational Excellence.



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The European Observatory

European Observatory:
Knowledge Needs & Job Market



Knowledge Gap in HE in IE&M:
Body of Knowledge

Call for Proposals:

Innovative University-Industry Projects in HE in IE&M

co-Funding Projects - Monitoring Results - Labelling Products (*)

Innovative HE Products

(*) Quality standard possibly consistent with the European Degree Guidelines



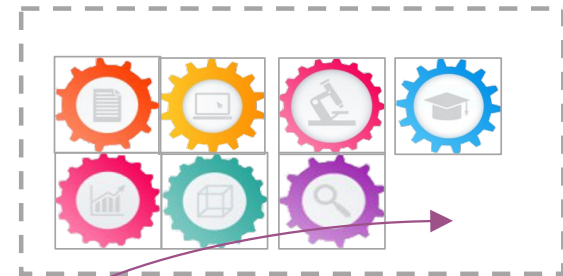
Sharing HE Products

Digital Catalogue
of HE Products



The School at a Glance

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Networking



(Professor – Managers – Students)

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The European Observatory

Higher Education Projects (examples)

Transversal e-Modules

AI in: Project Management

Predictive Maintenance

Operations Management

Safety of Work and European Directives

Lean Manufacturing ...

... Process Oriented e-Modules

De-Carbonizing Processes in Steel Industry

Business Models for (Green) Energy Management

Quality Control in Pharmaceutical Processes ...



<https://www.eitmanufacturing.eu/what-we-do/education/resources/teaching-factory/>

Teaching Factory:

Collaboration space between practitioners, students, and faculty

Living / Virtual HE Labs: Teaching Factory ...



48th AIM Conference – Malaga 10-13 September, 2026

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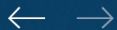
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AI in Project Management

We invite European universities to design challenge
based e-learning modules. Funding up to € 20,000.
Deadline 15 September 2026.

[Discover the Call](#)



<https://www.esiem.eu>

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President of Foundation ESIEM



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NON SCHOLAE SED VITAE DISCIMUS

European Survey on Higher Education in IE&M

The European Observatory of ESIEM

prof. Giovanni Mummolo

Presidente Foundation ESIEM

The WG of the Survey

March – July 2026

Miss Marta Correia, Engineering and Data Science MSc Student@Faculty of Engineering -
University of Porto - VP of Education of the 36th Board @ESTIEM

Prof. Francesco Facchini, Polytechnic University of Bari

Prof. Janerik Lundquist, Linkoping University, AIM fellow and past President

Prof. Giovanni Mummolo, University of Bari, President of ESIEM, President of AIM

Prof. Joaquin Ordieres, Universidade Politecnica de Madrid, AIM fellow and board Member

Prof. Hendrik van Landeghem, University of Ghent, AIM fellow and board Member.

Number of Respondents

Companies**36**

respondents

Professors**62**

respondents

Students**58**

respondents

Number of Competence Topics: 28

Expertise scoring:

Not offered/not required = 0; Low = 1; Medium = 2; High = 3

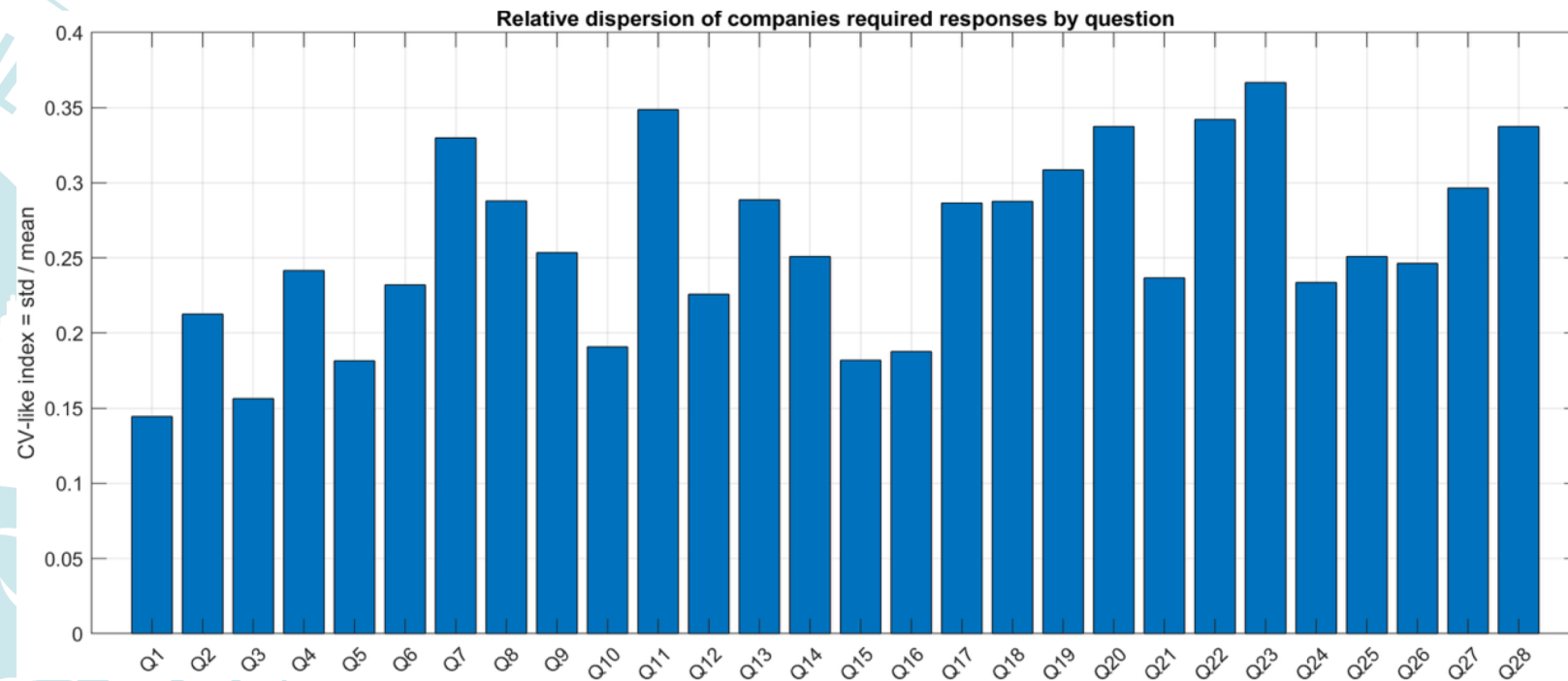
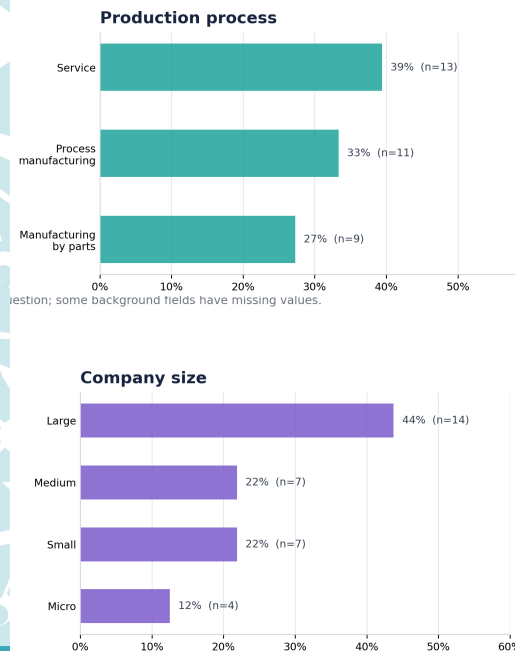


Competence Topics: 28

QuestionID	Question		
Q1	1. Project Management	Q15	15. Communication skills
Q2	2. Operations Management	Q16	16. Team working
Q3	3. Quality Management	Q17	17. Environmental Social and Governance Strategy
Q4	4. Logistics	Q18	18. Supply Chain Risk and Resilience Management
Q5	5. Problem solving and decision making	Q19	19. Corporate Data Governance and AI Privacy
Q6	6. Industrial Organization	Q20	20. AI Ethics and Critical Verification (Fact-checking AI)
Q7	7. Industrial Marketing	Q21	21. Cyber Security competencies
Q8	8. Investment and Finance	Q22	22. Sensor-based competencies
Q9	9. Strategic Management	Q23	23. IoT monitoring competencies
Q10	10. Innovation and Change Management	Q24	24. Computer-based Statistics competencies
Q11	11. Entrepreneurial Mindset and Skills	Q25	25. Management software tools (e.g., ERP, CRP, MES, etc.)
Q12	12. Leadership Issues	Q26	26. Big Data Analysis
Q13	13. Ergonomics	Q27	27. Machine Learning/AI competencies
Q14	14. Safety of work	Q28	28. Applied Prompt Engineering & AI Interfacing

Low variability (std/mean) of Companies' evaluation across the 28 Competence areas !

Percentages are calculated on valid answers for each question; some background fields have missing values.



Top 15 Expertise Competence areas

Green bars areas
have High+Medium
>= 90 %



Top expertise areas required by Companies

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Top expertise areas required by companies

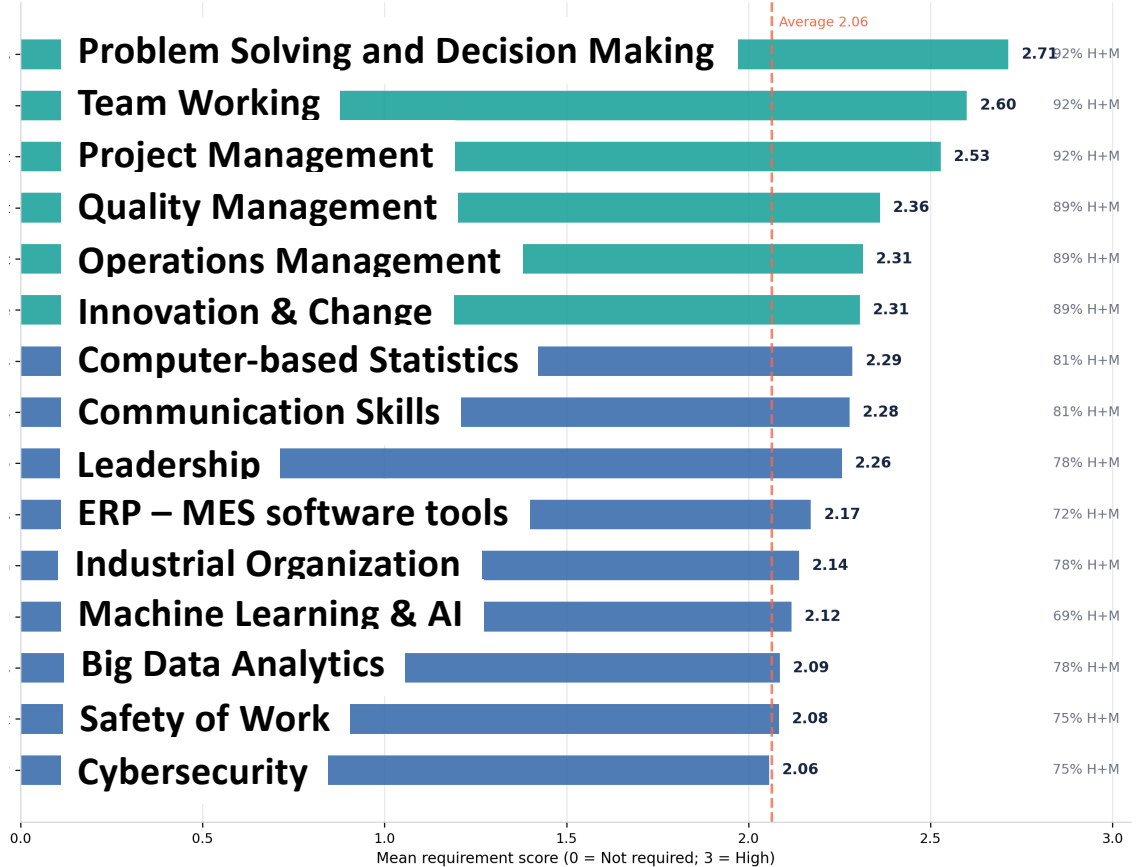


Table I.1. Ranking of the competences that companies require of IE&M graduates: Soft-Brain Skills (green coloured), Management Skills (grey coloured), AI Digital Skills (cyan coloured)

Rank	Expertise area	Mean score (max 3)	High +Medium
1	Problem solving and decision making	2.72	94 %
2	Team working	2.60	92 %
3	Project Management	2.42	91 %
4	Quality Management	2.36	89 %
5	Operations Management	2.35	89 %
6	Innovation and Change Management	2.31	89 %
7	Computer-based Statistics competencies	2.30	85 %
8	Communication skills	2.28	81 %
9	Leadership Issues	2.27	79 %
10	Management software tools (e.g., ERP, CRP, MES, etc.)	2.17	72 %
11	Industrial Organization	2.14	78 %
12	Machine learning and AI	2.12	69 %
13	Big Data Analysis	2.09	78 %
14	Safety of Work	2.08	75 %
15	Cyber Security	2.06	75 %
16	Strategic Management	2.00	78 %
17	Environmental, Social and Governance Strategy	1.97	69 %
18	Applied Prompt Engineering	1.97	76 %
19	Corporate Data Governance and AI Privacy	1.91	60 %
20	AI Ethics and Critical Verification (Fact-checking AI)	1.88	65 %
21	Entrepreneurial Mindset and Skills	1.84	58 %
22	Supply Chain Risk and Resilience Management	1.83	64 %
23	Logistics	1.75	67 %
24	Investment and Finance	1.69	69 %
25	IoT Monitoring	1.58	58 %
27	Ergonomics	1.56	56 %
26	Industrial Marketing	1.44	53 %
28	Sensor-based competence	1.23	58 %

Ranking of competence required by Companies

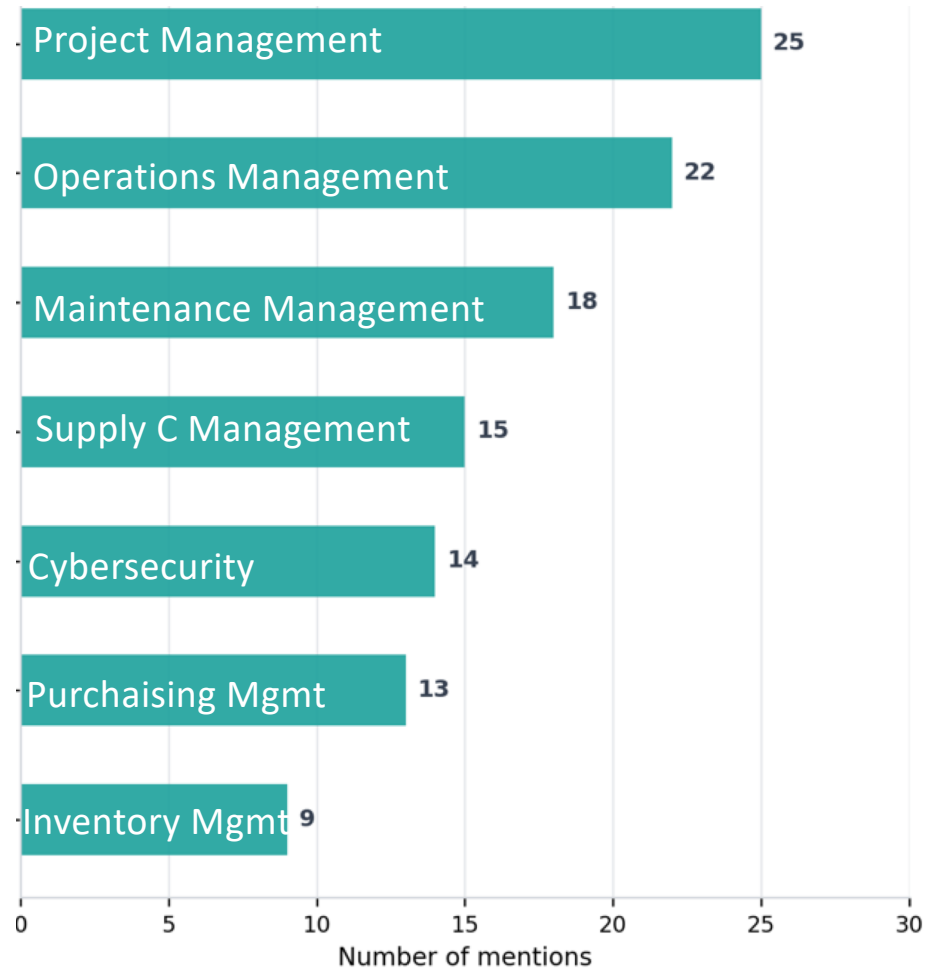
Soft / Brain Skills

Management Skills

AI Digital Skills



Expected AI use by Companies



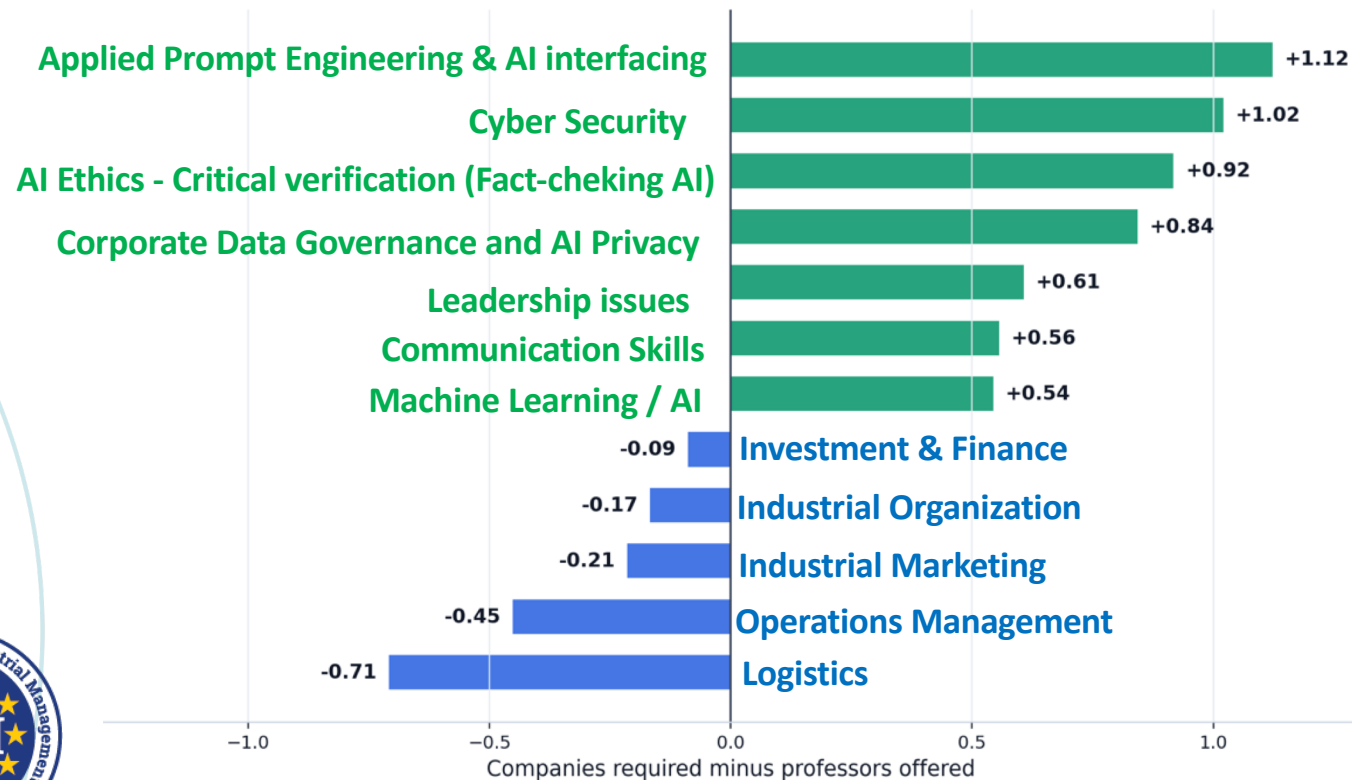
Largest pos / neg Gap:
Companies requirements
minus
2026 Academic coverage

Gap > 0: Company demand over
current academic offering

Gap < 0: Current academic
offering over Company demand



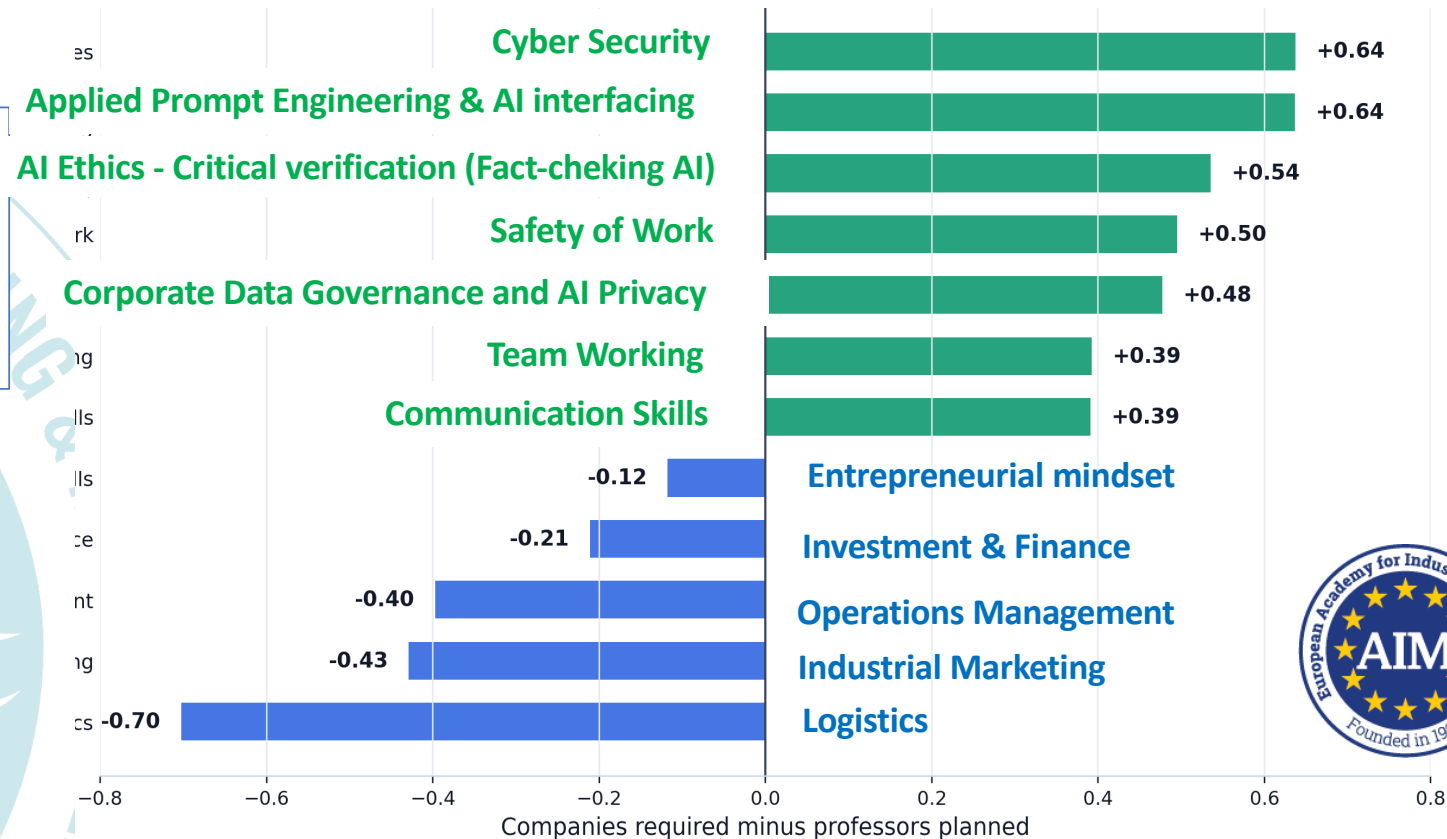
Company requirements vs current academic offering



Largest pos / neg Gap:
Companies requirements
minus
Planned Academic coverage

Gap > 0: Company demand over
planned academic offering

Gap < 0: Planned academic
offering over Company demand



Gap Matrix by Macro-areas

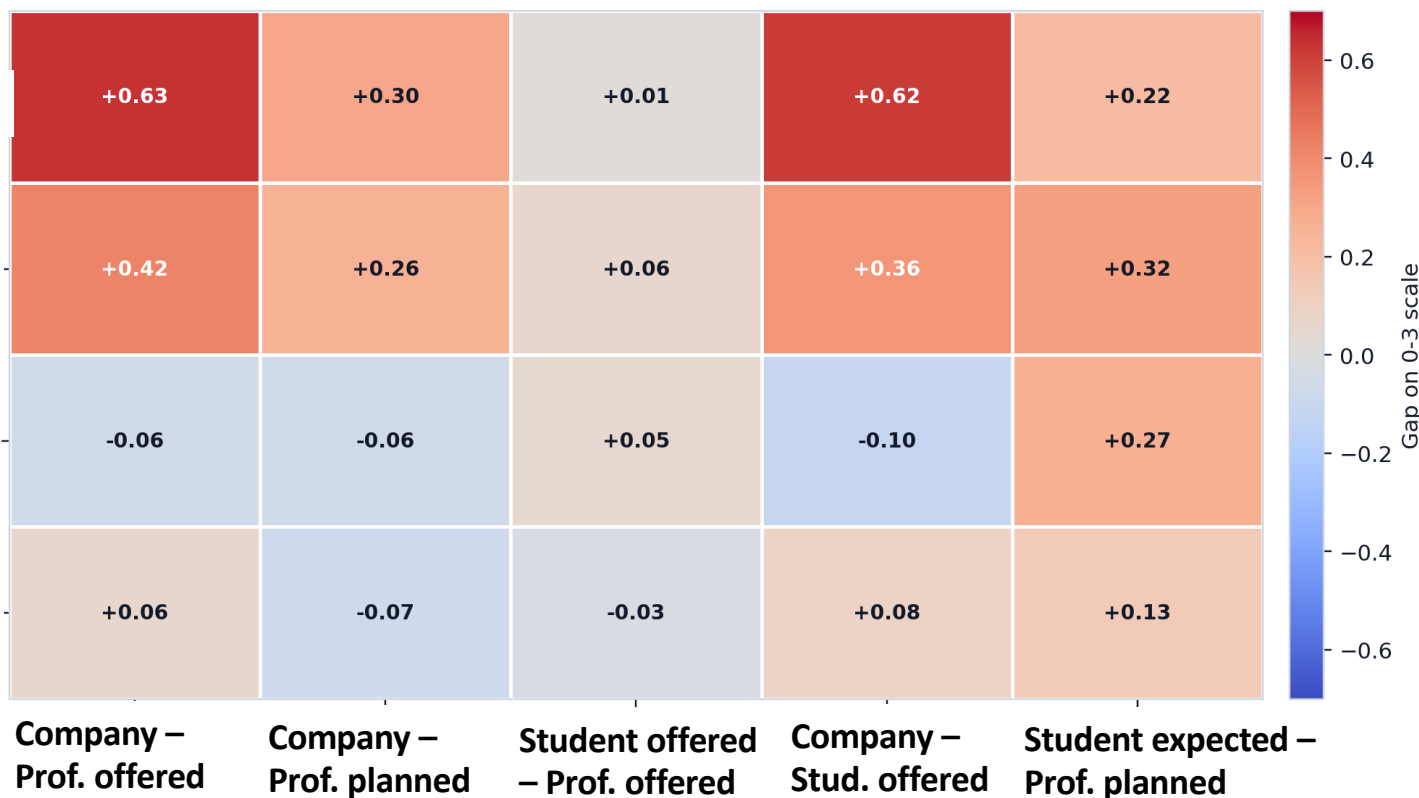
Digital, Data & AI

Human & Management Skills

Operations, Engineering & Supply Chain

Strategy, Business & Sustainability

Macro-area view of cross-stakeholder gaps



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