# The Future of Upskilling for Work, and Industry-University Collaboration in the AI Era: Case studies of AI, Analytics and other technology-enabled solutions for Industry-University collaboration to prepare for the future of work in Digital Era.

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The purpose of this mini-track is to invite studies of applications of technologies (such as AI and analytics) in the domain of industry-university collaboration for meeting emerging requirements of future work and upskilling the workforce.

The future of work is a widely debated topic, and there appears to be agreement that the requirements for workers dramatically change. Complex work change includes: work content, task-specific skills, meta-skills, work environments and work modes (Unkila, 2021). Coming changes will be more profound than those witnessed during past decades.

In the AI and digital era, the need for T-shaped upskilling will increase - more depth and breadth - with lifelong learning plans or individual learning plans from high school through multiple jobs and careers. Future jobs will grow in the knowledge/tech-intensive service sector of the economy, as well as entrepreneurship for next generation local green agriculture, manufacturing, and traditional service sector professions and shops, including healthcare, government, transportation, communications, entertainment & hospitality, finance, investing, and real-estate, (Moghaddam, Demirkan, Spohrer 2018; Gardner, Marietta 2020).

Continuous upskilling/reskilling is needed. In this era of uncertainty, complexity and disruptive changes, companies need to discover new ways of ensuring that they have the skills and capabilities to thrive. The Future of Jobs Report 2020 (WEF 2020) highlights that skills gap continues to be a challenge, since the in-demand skills are changing across nearly all jobs. According to the report, companies estimate that around 40% of workers need reskilling or upskilling of up to six months.

Higher education institutions need to solve how to provide students with the necessary skills based on existing faculty competences and budget constraints that limit possibilities to invest in technology infrastructure. Higher education must turn to innovative, quick and scalable solutions to close the skills gap across a variety of curricula.

Collaboration between industry and the academia must improve, eliminating underutilized collaboration potential for upskilling and reskilling. Building on existing collaboration models, novel technology applications offer possibilities to explore. One question is also how technology will transform the role of scholars (researchers) and educators (faculty), and the need for more industry collaboration and both sides learning to invest in the future of learning and work collaboratively (Spohrer, Maglio, Vargo, Warg 2022, forthcoming).

In the paper “Mining Health Informatics Job Advertisements: Insights for Higher Education Programs and Job Seekers” by Ahmed Elnoshokaty, Mohammad Al-Ramahi, Omar El-Gayar, Abdullah Wahbeh, Tareq Nasralah web scraping and data mining was used to analyze 831 health informatics job advertisements on indeed.com. Results showed that 87% of jobs explicitly required a college degree in a related field, 41% of jobs preferred a graduate degree, while 29% preferred or required professional certification. The analysis showed that preferred skills were analytics problem solving, communication skills, oral communication, interpersonal skills, project management, statistics, and

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critical thinking. The analysis also showed that college degrees, certifications, and the above-mentioned skill set are in high demand for working in the field of health informatics, especially in states with large populations and strong economies. Our results inform curriculum development of health informatics programs in higher education, which helps map knowledge units across the curricula to bridge the skills gap and meet employers' expectations. At the same time, the results help job seekers familiarize themselves with what employers seek in a successful candidate.

We hope you enjoy the paper and presentation at this HICSS conference. We thank the author for submitting work to make this minitrack successful. We also thank the reviewers for their valuable feedback.

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