



Intellectual output 2 Future jobs

Counsellors Study and Training Exchange Programme (C-STEP)

Recommendation for selection of content, material and resources for the media centre (O4)

Academia + Project Working Team

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Links

- Industry 4.0 and the consequences for the labor market and economy:
<http://www.iab.de/en/publikationen/forschungsbericht/publikationendetails-forschungsbericht.aspx/Publikation/k151019301>
- Rifkin report:
https://www.troisiemerevolutionindustrielle.lu/wp-content/uploads/2016/11/TIR-CG_Luxembourg-Final-Report_Long-Version.pdf
- On the move: Manufacturing's return to the developed world:
<https://www.fdiintelligence.com/Locations/On-the-move-manufacturing-s-return-to-the-developed-world>
- The Future of Skills: Employment in 2030:
<https://www.nesta.org.uk/report/the-future-of-skills-employment-in-2030/>
- The risk of Automation for jobs in OECD countries:
<https://www.oecd-ilibrary.org/docserver/5jlz9h56dvq7-en.pdf?expires=1572872454&id=id&accname=guest&checksum=24569FB0D651B12E0EA6C6F82C2DC280>
- A future that works: Automation, employment and productivity:
<https://www.mckinsey.com/~media/mckinsey/featured%20insights/Digital%20Disruption/Harnessing%20automation%20for%20a%20future%20that%20works/MGI-A-future-that-works-Executive-summary.ashx>
- Nine challenges of Industry 4.0:
<https://iiot-world.com/connected-industry/nine-challenges-of-industry-4-0/>



- Industry 4.0. Challenges and solutions for the digital transformation and use of exponential technologies:
<https://www2.deloitte.com/cn/en/pages/consumer-industrial-products/articles/industry-4-0-challenges-and-solutions.html>
- Industry 4.0: challenges and opportunities:
<https://eandt.theiet.org/content/articles/2017/07/industry-4-challenges-and-opportunities/>
- Industry 4.0 – Opportunities and Challenges of the Industrial Internet:
<https://www.pwc.nl/en/assets/documents/pwc-industrie-4-0.pdf>
- New manufacturing: Industry 4.0 technology, techniques and innovation:
<http://edition.pagesuite-professional.co.uk/html5/reader/production/default.aspx?pubname=&pubid=4a388da6-59ad-4950-ba8e-b2ff400057c0>
- The risk of Automation for jobs in OECD countries:
<https://www.oecd-ilibrary.org/docserver/5jlz9h56dvq7-en.pdf?expires=1572872454&id=id&accname=guest&checksum=24569FB0D651B12E0EA6C6F82C2DC280>
- Complete guide: 10 smart factory trends to watch in 2019:
<https://internetofbusiness.com/complete-guide-10-smart-factory-trends-to-watch-in-2019/>
- Four Digital Transformation Trends Driving Industry 4.0:
<https://www.forbes.com/sites/danielnewman/2018/06/12/four-digital-transformation-trends-driving-industry-4-0/>
- Industry 4.0: The Future of Productivity and Growth in Manufacturing Industries:
http://www.inovasyon.org/pdf/bcg.perspectives_Industry.4.0_2015.pdf
- Embracing Industry 4.0 and Rediscovering Growth:
<https://www.bcg.com/capabilities/operations/embracing-industry-4.0-rediscovering-growth.aspx>



- Caruana H; (2019). Adapting VET to digitalisation and the future of work: Malta. Cedefop ReferNet thematic perspectives series:
http://libserver.cedefop.europa.eu/vetelib/2018/adapting_VET_digitalisation_future_work_Malta_Cedefop_ReferNet.pdf
- Eight futures of work:
http://www3.weforum.org/docs/WEF_FOW_Eight_Futures.pdf
- Key competencies for Industry 4.0:
https://www.researchgate.net/publication/322981337_Key_competencies_for_Industry_40
- Skill Development for Industry 4.0:
<http://www.globalskillsummit.com/whitepaper-summary.pdf>
- New skills needed for industry 4.0:
<https://www.vitria.com/blog/skill-sets-required-for-industry-4.0>
- A Knowledge-based Approach to Enhance the Workforce Skills and Competences within the Industry 4.0:
https://www.thinkmind.org/download.php?articleid=eknow_2018_4_10_60063
- Digitalisation and the Future of Work:
https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=61490
- Rethinking Manufacturing - designing a UK industrial strategy for the age of Industry 4.0:
<https://assets.kpmg/content/dam/kpmg/br/pdf/2017/04/rethink-manufacturing-a-new-uk-industrial-strategy.pdf>
- Industry 4.0: How can universities respond to future labour market needs?:
<https://www.advance-he.ac.uk/news-and-views/Industry-4.0-how-can-universities-respond>

Additional material (from Moodle e-learning platform)

(More information see: www.academiaplus.eu/moodle/)

- **Unit 1: " Industry 4.0 and the impact on labour"**

Additional material: "Helpful apps"

Listing/Tasks

- **Microsoft To Do** - can share lists with friends/family helps clients with accountability or to invite friends to know when you will be doing an activity they can join in with, maybe a walk, etc. - free
- **Todoist** - free
- **30/30** - timer for activities - free
- **Fathom** - allocating time to tasks and a little nicer on the eye to use, last time I checked it had a breakdown of the day and week available - free
- **MLO/My life organised** - automatically generates lists, previous clients have said this has been good for focused work
- **Trello** - you may have heard of this, it creates columns of tasks and their status such as to do..in progress, etc
- **Ticktick** - synchronises with Gmail emails, to create tasks, can send location-based reminders etc (Gmelius use to do something similar if it sticks exists)
- **Google Keep** - you may like this if you like sticky notes, location and time-based reminders can be set too - free

Time Management / Awareness building

- **Rescue time** - used as a tracker but allows you to set goals of screen time
- **Focus Keeper** - based on Pomodoro technique, it subconsciously aims to remove anxiety around time
- **Toggl** - used by clients on tracking time on projects to then later aim to reduce the time or use it more effectively



- **Forest** - a fun interactive way using trees to keep focused
- **Focus@will** - uses music (some scientifically researched) to help gain focus when stressed/under pressure
- **Harvest** - also allows invoice management
- **Desk Time** - this tracks time spent on applications etc, it also has a pomodoro timer that can be utilised for breaks, often people use desk time with another app as this does a lot of tracking of different kinds to help you gain awareness of the usage of your time when logged on to do work or not work

Managing ideas more efficiently

- **Mindnode** - organising thoughts on new ideas through mindmapping - Free
- **MindMeister** - does the above ^ but allows time management of tasks prioritising, attaching documents, etc
- **Pocket** - clients use this when surfing the web and storing things to come back to, so like articles to read for their work or to avoid procrastination/shortening research time/using up the time of another activity
- **Otter** - record your notes, transcriber tool
- **Notion** - multiple tools of recording notes, creating lists, acknowledging projects
- **Toptracker** - built for freelancers in mind, it's a time tracking tool - free
- **Hourstack** - exactly the same as other time apps but if you like a calendar layout and blocks this maybe a preference

Wellness related

- **Headspace** - you may have heard of this app, it's based-on mindfulness, brain workout of 10 minutes
- **My possible self** - only use if you want to raise awareness of when in the day you may be getting stressed or anything impactful emotions
- **Streaks** - helps you create lists for good healthy living habits



- **Wakeout** - for mini workouts, a few hundred free exercises library, some clients use this for when at the desk for long periods of time to unstiffen
- **Elevate** - for brain activities /brain stimulation
- **Power Nap** - to help with sleep in covid for those of you who can power nap but may not be
- **getting enough sleep**
- **Welltok** - created for employees to set wellness goals, etc.

Links about „National strategies“

- Latvia:
 - Master programme training Career counselling professionals for 2 years in 4 universities, source for guidance specialists:
https://viaa.gov.lv/lat/karjeras_atbalsts/lat_karjeras_atbalsts/karjeras_atbalsts_jaunumi/
 - Euroguidance Latvia: https://viaa.gov.lv/lat/karjeras_atbalsts/euroguidance_sadala/jaunumi/
- Finland:
 - Finnish Guidance system, trainings and career guidance: <https://www.euroguidance.eu/guidance-system-in-finland>
- Estonia:
 - Estonia's guidance system:
http://haridus.archimedes.ee/sites/default/files/Dokumendid/veebi_LifelongGuidance_2020.pdf
- Portugal:
 - Guidance system: <https://www.euroguidance.eu/guidance-system-in-portugal>
- Greece:
 - The greek guidance system <https://www.euroguidance.eu/guidance-systems-and-practice/national-guidance-systems/guidance-system-in-greece>



○ **Unit 2: "Challenges and opportunities for companies within Industry 4.0"**

Additional papers (see and download Pdf documents on Moodle: www.academiaplus.eu/moodle/)

- OECD (2020). Competition in Labour Markets. Accessible at:
<http://www.oecd.org/daf/competition/competition-concerns-in-labour-markets.htm>
- Eilers, S. et al. (2019). Focus on the effects of digitalisation on employment. An empirical study by the Institut für Beschäftigung und Employability IBE (institute for employment and employability) and Hays. Accessible at:
https://www.academiaplus.eu/moodle/pluginfile.php/1038/mod_resource/content/1/Focus%20on%20the%20effects%20of%20Digitalisation%20on%20Employment.pdf
- Manyika, J. et al. (2017). Jobs lost, jobs gained: workforce transitions in a time of automation. San Francisco: McKinsey Global Institute. Accessible at:
https://www.academiaplus.eu/moodle/pluginfile.php/1039/mod_resource/content/1/Jobs%20lost%20C%20jobs%20gained.pdf
- Freddi, D. (2018). The employment effects of digitalisation—a literature review. Accessible at:
https://www.academiaplus.eu/moodle/pluginfile.php/1040/mod_resource/content/1/The%20employment%20effects%20of%20digitalisation-%20a%20literature%20review.pdf
- World Economic Forum (2016). The Future of Jobs. Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution. Global Challenge Insight Report. Cologny/Geneva, Switzerland. Accessible at:
https://www.academiaplus.eu/moodle/pluginfile.php/1041/mod_resource/content/1/WEF_Future_of_Jobs%20%281%29.pdf
- World Economic Forum (2020). The Future of Jobs Report 2020. Cologny/Geneva, Switzerland. Accessible at:
https://www.academiaplus.eu/moodle/pluginfile.php/1042/mod_resource/content/1/WEF_Future_of_Jobs_2020%20%282%29.pdf



- Fisher, L. et al (2018). Workforce of the future. The competing forces shaping 2030. PwC's global People (<https://www.pwc.com/people>). Accessible at:
https://www.academiaplus.eu/moodle/pluginfile.php/1043/mod_resource/content/1/Workforce%20of%20the%20future%20the%20competing%20forces%20shaping%202030.pdf
- Stubbings, C. et al. (2017). Workforce of the future. The views of 10,000 worker. PwC's global People (<https://www.pwc.com/people>). Accessible at:
https://www.academiaplus.eu/moodle/pluginfile.php/1044/mod_resource/content/1/Workforce%20of%20the%20future.pdf
- Berg, J. et al. (2018). Digital labour platforms and the future of work. Towards decent work in the online world. International Labour Organization (ILO). Accessible at:
https://www.academiaplus.eu/moodle/pluginfile.php/1413/mod_resource/content/1/ILO%202018%20Digital%20decent%20work.pdf
- **Unit 3: "Upcoming trends"**
 - National plan of digitalization (Portugal):
<https://www.portugal.gov.pt/gc22/portugal-digital/documento-de-suporte-a-apresentacao-realizada-a-5-de-marco-de-2020-pdf.aspx>
 - Digital teaching and learning:
<https://www.bmbf.de/de/bildung-digital-3406.html>
 - Collection of initiatives, material, tools regarding digital education in Germany (German Ministry of Education and Research):
<https://www.bpb.de/lernen/digitale-bildung/>
 - "What the Digital Pact for Schools has achieved so far?":
<https://deutsches-schulportal.de/schule-im-umfeld/digitalpakt-die-wichtigsten-fragen-und-antworten/>



- The Digital Pack School:

<https://www.digitalpaktschule.de>

- German Government on digitization:

<https://www.bundesregierung.de/breg-de/themen/digitalisierung>

- Germany in comparison to other countries in Europe:

https://ec.europa.eu/germany/news/20200611-digitalisierung_de

- Portugal's Action Plan for Digital Transition:

<https://portugaldigital.gov.pt/wp-content/uploads/2020/06/Action-Plan-for-Digital-Transition.pdf>;

<https://portugaldigital.gov.pt/wp-content/uploads/2020/06/Presentation-Action-Plan-For-Digital-Transition.pdf>

- Strategy and Vision for AI in Malta 2030:

<https://malta.ai>

- A Strategy and Vision for Artificial Intelligence in Malta 2030:

https://malta.ai/wp-content/uploads/2019/11/Malta_The_Ultimate_AI_Launchpad_vFinal.pdf

- Elements of AI free online course:

<https://www.elementsofai.com>

- Career portal:

careersportal.ie

- Solutions for deep learning and machine learning:

<https://www.forbes.com/sites/bernardmarr/2020/03/16/the-10-best-free-artificial-intelligence-and-machine-learning-courses-for-2020/?sh=7b3fafac6f66>



- EPALE Europa:

<https://epale.ec.europa.eu/lv/blog/validacija-jeb-ieguto-prasmju-apliecinasana-jauna-pieredze-pieauguso-izglitiba>

- Academic Information Centre:

<http://aic.lv/portal/lv>

Additional papers (see and download Pdf documents on Moodle: www.academiaplus.eu/moodle/)

- Wolfert, S. et.al (2017). Big Data in Smart Farming – A review. *Agricultural Systems*, 153, pp. 69-80.

ISSN 0308-521X. Accesible at:

https://www.academiaplus.eu/moodle/pluginfile.php/1019/mod_resource/content/2/C2%20U3%20BD%20und%20smart%20farming.pdf

- Oussous, A. et al. (2018). Big Data technologies: A survey. *Journal of King Saud University - Computer and Information Sciences*, 30, Issue 4, pp. 431-448. ISSN 1319-1578. Accesible at:

https://www.academiaplus.eu/moodle/pluginfile.php/1020/mod_resource/content/2/C2%20U3%20BD.pdf

- Chan, C.Y. (2017). Advancements, prospects, and impacts of automated driving systems. *International Journal of Transportation Science and Technology*, 6, Issue 3, pp. 208-216. ISSN 2046-0430. Accesible at:

https://www.academiaplus.eu/moodle/pluginfile.php/1021/mod_resource/content/2/C2%20U3%20AD%20und%20Transport.pdf

- Puig, A. et al. (2020). Lessons learned from supplementing archaeological museum exhibitions with virtual reality. *Virtual Reality* (2020) 24:343–358. Accesible at:

https://www.academiaplus.eu/moodle/pluginfile.php/1022/mod_resource/content/2/C2%20U3%20VR%20fur%20Museen.pdf

- Kavanagh, S. et al. (2017). A systematic review of Virtual Reality in education. *Themes in Science & Technology Education*, 10(2), 85-119. Accesible at:



https://www.academiaplus.eu/moodle/pluginfile.php/1023/mod_resource/content/2/C2%20U3%20VR%20in%20Bildung.pdf

○ **Unit 4: "New skills and competences"**

- European Skills/Competencies, qualifications and occupations (ESCO):

<https://ec.europa.eu/esco/portal/home>

- EU Skills Profile Tool for Third Country Nationals:

<https://ec.europa.eu/migrantskills/#/>

- List of ESCO implementers for upskilling/reskilling

- Certif-ID: <https://certif-id.com/>

- Boost.rs: <https://boost.rs/>

- the Adecco Group Italy: <https://adeccogroup.it/>

- ODEM: <https://odem.cloud/>

- SkillLab: <https://skilllab.io/en-us>

- The Future of Jobs Report 2018, World Economic Forum:

http://www3.weforum.org/docs/WEF_Future_of_Jobs_2018.pdf

- Future of Jobs Report 2020:

http://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf

- E-learning: Possibilities und Trends: Erwachsenenbildung EB-MOOC:

<https://erwachsenenbildung.at/ebmooc>

- Global EdTech Report 2020 (IBIS Capital/Cairneagle Associates):

[https://insights.edtechxeurope.com/hubfs/EdTechX%20Global%20Report%202020%20\(Teaser\).pdf](https://insights.edtechxeurope.com/hubfs/EdTechX%20Global%20Report%202020%20(Teaser).pdf)

- 2018/2020 EDUCAUSE Horizon Report: 2018:

https://library.educause.edu/media/files/library/2020/3/2020_horizon_report_pdf.pdf?la=en&hash=08A92C198E8113BCB15DCA7BA1F467F303BA80; 2020:



<https://library.educause.edu/media/files/library/2019/4/2019horizonreport.pdf?la=en&hash=C8E8D444AF372E705FA1BF9D4FF0DD4CC6F0FDD1>

- Will Digital Technologies Change Your Job?:

<https://job-futuromat.iab.de/en/>

- 36C3 - BahnMining - Pünktlichkeit ist eine Zier:

<https://www.youtube.com/watch?v=0rb9CfOvojk>

- The Future of Jobs Report 2018:

http://www3.weforum.org/docs/WEF_Future_of_Jobs_2018.pdf

- SmartFactoryKL Industrie 4.0:

https://www.youtube.com/watch?v=9R_P8FpslBY

- EdTechX Global Report – Teaser. The 2020 Guide to Education and Training:

[https://insights.edtechxeurope.com/hubfs/EdTechX%20Global%20Report%202020%20\(Teaser\).pdf](https://insights.edtechxeurope.com/hubfs/EdTechX%20Global%20Report%202020%20(Teaser).pdf)

- EBmooc – the Massive Open Online Course for Adult Education:

<https://erwachsenenbildung.at/ebmooc/>