

Learning Materials Resources

There are two categories of resources: public and private materials. Case study and some YouTube content are made public, while private files are uploaded to Owncloud and Google drive. The following table provides a comprehensive listing of the available resources for the four Pilots (Domains):

- Domain 1: Industrial Engineering and Management (CMU-KU)**

No	Training Module	Resource Link
1	Introduction to IR 4.0	Private : 1. https://disp-ds.univ-lyon2.fr/owncloud/f/1118695
2	Cloud ERP	Public : 1. https://youtu.be/-e0wUNem_aY Private : 1. https://disp-ds.univ-lyon2.fr/owncloud/f/1384608
3	Integrated Simulation and Optimization	Private : 1. https://disp-ds.univ-lyon2.fr/owncloud/f/1384611
4	Data Collecting System	Private : 1. https://disp-ds.univ-lyon2.fr/owncloud/f/1384609
5	Automatic Data Collecting System	Private : 1. https://disp-ds.univ-lyon2.fr/owncloud/f/1384607
6	Decision Making with Big Data	Private : 1. https://disp-ds.univ-lyon2.fr/owncloud/f/1384610
7	Human Resource Management for Industry 4.0	Private : 1. https://drive.google.com/drive/folders/1MLCJzpi2oCUNXzEU0SusyVIH7UBNrDOZ?usp=sharing

No	Training Module	Resource Link
8	Digital Communication	Private : https://drive.google.com/drive/folders/1MLCJzpi2oCUNXzEU0SusyVIH7UBNrDOZ?usp=sharing
9	Role of Data for Future Organization	Private : https://drive.google.com/drive/folders/1MLCJzpi2oCUNXzEU0SusyVIH7UBNrDOZ?usp=sharing
10	Business Intelligence	Private : https://drive.google.com/drive/folders/1MLCJzpi2oCUNXzEU0SusyVIH7UBNrDOZ?usp=sharing
11	New Product Development	Private : https://drive.google.com/drive/folders/1MLCJzpi2oCUNXzEU0SusyVIH7UBNrDOZ?usp=sharing

- **Domain 2: Software Engineering and Big Data Analytics (CUIT-CDU)**

For the domain 2: Software Engineering and Big Data Analysis, we have some videos of the courses including Principle and Application of BigData Technology, Comprehensive Training of Artificial Intelligence, Critical Thinking Oriented BigData, Smart Decision Making with BigData, Data Mining Ideology and Technology.

Links to the above courses are below:

1. Principle and Application of BigData Technology: <ftp://nelsa.cn/shyfte-China/PABT/>
2. Comprehensive Training of Artificial Intelligence: <ftp://nelsa.cn/shyfte-China/CTAI/>
3. Critical Thinking Oriented BigData: <ftp://nelsa.cn/shyfte-China/CTOB/>
4. Smart Decision Making with BigData: <ftp://nelsa.cn/shyfte-China/SDMB/>
5. Data Mining Ideology and Technology: <ftp://nelsa.cn/shyfte-China/DMIT/>

Confidential Material

For the domain 2, we have some learning material documents for the five modules and some feedback from companies or university teachers. The links as below:

Learning materials link:

[https://disp-ds.univ-lyon2.fr/owncloud/apps/files/?dir=/SHYFTE%20\(3\)/Approved%20Deliverables/Resources/Private/CDU&fileid=1382941](https://disp-ds.univ-lyon2.fr/owncloud/apps/files/?dir=/SHYFTE%20(3)/Approved%20Deliverables/Resources/Private/CDU&fileid=1382941)

[https://disp-ds.univ-lyon2.fr/owncloud/apps/files/?dir=/SHYFTE%20\(3\)/Approved%20Deliverables/Resources/Private/CUIT&fileid=1382943](https://disp-ds.univ-lyon2.fr/owncloud/apps/files/?dir=/SHYFTE%20(3)/Approved%20Deliverables/Resources/Private/CUIT&fileid=1382943)

Modules reviews:

[https://disp-ds.univ-lyon2.fr/owncloud/apps/files/?dir=/SHYFTE%20\(3\)/WorkPackages/WP2_DEVELOPMENT/T2.2_LearningMaterials&fileid=1384578](https://disp-ds.univ-lyon2.fr/owncloud/apps/files/?dir=/SHYFTE%20(3)/WorkPackages/WP2_DEVELOPMENT/T2.2_LearningMaterials&fileid=1384578)

- **Domain 3: Wireless Networks Analytics (UPM)**

No	Training Module	Resource Link
1	Introduction to IR 4.0	Private : 2. https://disp-ds.univ-lyon2.fr/owncloud/f/1118695
2	Introduction to Cybersecurity	Public : 2. https://www.youtube.com/watch?v=btZhrmK2sYA 3. https://www.youtube.com/watch?v=odPdvvWNBK4 4. https://www.youtube.com/watch?v=iFGve5MUUnE 5. https://www.youtube.com/watch?v=7KCMK-LY-WM 6. https://www.youtube.com/watch?v=Dk-ZqQ-bfy4 7. https://www.youtube.com/watch?v=zqvDu0OaY8k Private : 2. https://disp-ds.univ-lyon2.fr/owncloud/remote.php/webdav/SHYFTE%20(3)/WorkPackages/WP2_DEVELOPMENT/T2.3_LearningMaterials/Introduction_to_Cybersecurity-SHYFTE-FHH.pptx
3	Introduction to Energy Management	Public : 1. Recorded lecture - https://drive.google.com/file/d/1pgdmtZ3r_OLMoBjvzQtfem3-Nj1Oluud/view?usp=sharing Private : 2. https://disp-ds.univ-lyon2.fr/owncloud/remote.php/webdav/SHYFTE%20(3)/WorkPackages/WP2_DEVELOPMENT/T2.3_LearningMaterials/Domain3-Intro_to_Energy_Mgmt.pptx
4	Data Acquisition and Analysis	Public : 1. https://www.youtube.com/watch?time_continue=224&v=w6ygDCTSQu&feature=emb_logo 2. https://www.youtube.com/watch?v=UrwbeOllc68 3. https://www.youtube.com/watch?v=x-KBN5cPGww 4. https://www.youtube.com/watch?v=Pwc0cX43sec 5. https://www.youtube.com/watch?v=K2vLNTvJcQE 6. https://www.youtube.com/watch?v=-ijLW67YIzY

		<p>7. Recorded lecture - https://youtu.be/b1195aqDI1o</p> <p>8. Recorded lecture - https://youtu.be/PKJ-6oEGUqQ</p> <p>Private :</p> <p>2. https://disp-ds.univ-lyon2.fr/owncloud/remote.php/webdav/SHYFTE%20(3)/WorkPackages/WP2_DEVELOPMENT/T2.3_LearningMaterials/Domain3-Data_acquisition_and_analysis.pptx</p>
5	Renewable Energy for Wireless Network	<p>Public :</p> <p>1. https://www.youtube.com/watch?v=SdZODbIT010</p> <p>2. https://hal.archives-ouvertes.fr/hal-01283728/document</p> <p>3. Recorded lecture - https://drive.google.com/file/d/1gGsntNggI-H-zl9mZbm2PBWNqwcgo_Mc/view?usp=sharing</p> <p>Private :</p> <p>2. https://disp-ds.univ-lyon2.fr/owncloud/remote.php/webdav/SHYFTE%20(3)/WorkPackages/WP2_DEVELOPMENT/T2.3_LearningMaterials/Domain3-Renewable_Energy_for_Wireless_Net.pptx</p>
6	Data Governance and Management	<p>Public :</p> <p>1. https://www.tableau.com/learn/articles/data-governance-best-practices</p> <p>2. https://www.iotone.com/casestudies</p> <p>3. Recorded lecture - https://drive.google.com/file/d/1HNtKdOtCECQbHN3brOsLdivpQ9FYOhxn/view?usp=sharing</p> <p>Private :</p> <p>2. https://disp-ds.univ-lyon2.fr/owncloud/remote.php/webdav/SHYFTE%20(3)/WorkPackages/WP2_DEVELOPMENT/T2.3_LearningMaterials/Domain3-Data_governance_and_management.pptx</p>
7	Green Energy Wireless Network	<p>Public :</p> <p>1. Recorded lecture - https://drive.google.com/file/d/1HNtKdOtCECQbHN3brOsLdivpQ9FYOhxn/view?usp=sharing</p> <p>Private :</p> <p>2. https://disp-ds.univ-lyon2.fr/owncloud/remote.php/webdav/SHYFTE%20(3)/WorkPackages/WP2_DEVELOPMENT/T2.3_LearningMaterials/Domain3-Green_Energy_Wireless_Network.pptx</p>

- **Domain 4: Artificial Intelligence (UTM)**

A website dedicated to Artificial Intelligence domain is developed by UTM team in order to update the news and events on SHYFTE activities. The address of the website is <https://www.utm.my/shyfte/> and it can be accessed by public. In addition, a playlist on Youtube is created to showcase SHYFTE activities and can be accessed via the following address:

<https://youtube.com/playlist?list=PLSB8f39y-65nRKDbcGGTnHwBAqYwIkUmA>

There are two specific videos created for SHYFTE AI domain as listed below:

1. Video on Introduction of UTM SHYFTE: <https://youtu.be/nJOEDJoylh0>
2. Video on Training of Students: <https://youtu.be/GZvtYwll8M>

Table 8.1 shows the resources link for each training modules involve in the ToT and ToS sessions. The resources were used for the development of the modules, as well as for the training sessions and they can be accessed publicly.

Training Module	Resource Link
Fundamental of Artificial Intelligence	<p>[1] https://youtu.be/kWmX3pd1f10</p> <p>[2] Kok, J. N., Boers, E. J., Kusters, W. A., Van der Putten, P., & Poel, M. (2009). Artificial intelligence: definition, trends, techniques, and cases. <i>Artificial intelligence</i>, 1, 270-299.</p> <p>[3] Kaul, Vivek, Sarah Enslin, and Seth A. Gross. "The history of artificial intelligence in medicine." <i>Gastrointestinal endoscopy</i> (2020).</p> <p>[4] https://www.mygreatlearning.com/blog/what-is-artificial-intelligence/.</p> <p>[5] https://www.luxtag.io/blog/artificial-intelligence-challenges-benefits-and-risks/.</p> <p>[6] https://www.upgrad.com/blog/top-challenges-in-artificial-intelligence/.</p>

	<p>[7] https://ec.europa.eu/digital-single-market/en/news/ethics-guidelines-trustworthy-ai.</p>
Introduction to Artificial Intelligence Application	<p>[1] https://www.theguardian.com/technology/2018/oct/10/amazon-hiring-ai-gender-bias-recruiting-engine</p> <p>[2] Explaining and Harnessing Adversarial Examples, Goodfellow et al, ICLR 2015</p> <p>[3] https://towardsdatascience.com/compas-case-study-fairness-of-a-machine-learning-model-f0f804108751</p>
Supervised and Unsupervised learning	<p>[1] https://youtu.be/cfj6yaYE86U</p> <p>[2] https://teachablemachine.withgoogle.com/</p>
Artificial Intelligence for Computer Vision	<p>[1] https://youtu.be/Uvu6NNOvhq4</p> <p>[2] https://developer.nvidia.com/embedded/jetson-nano-developer-kit</p> <p>[3] https://youtu.be/NYM0l1JZIVA</p> <p>[4] https://youtu.be/QXlWdsyK7Rw</p> <p>[5] https://youtu.be/OcycT1Jwsns</p>
Convolution Neural Network	<p>[1] https://youtu.be/QzY57FaENXg</p> <p>[2] https://viso.ai/deep-learning/vgg-very-deep-convolutional-networks/</p>
Artificial Intelligence for Industry	<p>[1] https://www.techopedia.com/definition/190/artificial-intelligence-ai</p> <p>[2] https://robots.ieee.org/robots/?t=sort</p> <p>[3] https://kambria.io/blog/three-types-of-ai/</p> <p>[4] https://hbr.org/2018/01/artificial-intelligence-for-the-real-world</p>
Advance Machine Learning for Big Data	<p>[1] Shafaatunnur Hasan, Siti Mariyam Shamsuddin and Noel Lopes. Machine Learning Big Data Framework and Analytics for Big Data Problems. International Journal of Advances in Soft Computing and its Application, 6, 2(2014), 1-14.</p> <p>[2] Shafaatunnur Hasan, Siti Mariyam Shamsuddin and Noel Lopes. Soft Computing Methods for Big Data Problems. GPU Computing and Applications (2015), 235-247.</p> <p>[3] http://gpumlib.sourceforge.net</p>



<p>Metaheuristic Optimization</p>	<p>[1] Thomas Weise, Metaheuristic Optimization, Hefei University, Institute of Applied Optimization, Shushan District, Hefei, Anhui, China. http://iao.hfuu.edu.cn/images/teaching/lectures/metaheuristic_optimization/01_introduction.pdf</p> <p>[2] S. Russel, P. Norvig, Artificial Intelligence, A Modern Approach, Pearson.</p> <p>[3] “Traveling Salesman Problem (TSP) with Miller-Tucker-Zemlin (MTZ) in CPLEX/OPL. https://co-enzyme.fr/blog/traveling-salesman-problem-tsp-in-cplex-opl-with-miller-tucker-zemlin-mtz-formulation/</p> <p>[4] https://cvisualized.eschirtz.com/#/demos/ep01</p> <p>[5] Simulated Annealing - The Travelling Salesman Problem, John Walker, June, 2018 https://www.fourmilab.ch/documents/travelling/anneal/</p> <p>[6] T. Munkata, “Fundamentals of the New Artificial Intelligence, Neural, Evolutionary, Fuzzy and More:”, Second Edition, Springer, 2008.</p> <p>[7] Martins, J., & Ning, A. (2021). <i>Engineering Design Optimization</i>. Cambridge: Cambridge University Press. doi:10.1017/9781108980647.</p> <p>[8] https://tools-unite.com/tools/random-picker-wheel</p> <p>[9] http://www.edc.ncl.ac.uk/highlight/rhjanuary2007g02.php</p>
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Confidential Materials

All confidential materials were uploaded in OwnCloud and will also be uploaded in the learning centre’s website. Table 8.2 lists down all the links that stores the resources in terms of notes and recorded training sessions.

Training Module	Resource Link
Fundamental of Artificial Intelligence	Notes: https://disp-ds.univ-lyon2.fr/owncloud/f/1382956

<p>Introduction to Artificial Intelligence Application</p>	<p>Notes: https://disp-ds.univ-lyon2.fr/owncloud/f/1382957 Recorded lecture for Training of Trainers: Link: https://utm.webex.com/utm/ldr.php?RCID=605a4150ce1d1f9096a2c5dd3ebdac2e Password: NhHFpxP5</p>
<p>Supervised and Unsupervised learning</p>	<p>Notes: https://disp-ds.univ-lyon2.fr/owncloud/f/1382959 Recorded lecture for Training of Trainers: https://disp-ds.univ-lyon2.fr/owncloud/f/1417116</p>
<p>Artificial Intelligence for Computer Vision</p>	<p>Notes: https://disp-ds.univ-lyon2.fr/owncloud/f/1382963 Recorded lecture for Training of Trainers: Part 1 link: https://utm.webex.com/utm/ldr.php?RCID=6c9c5c2a66ff27603ae5e3d9fc304733 Password: XapWdKH5 Part 2 link: https://utm.webex.com/utm/ldr.php?RCID=d5d271395c8d168b3d5304ffae25da8 Password: uPJDeX7V</p>
<p>Convolution Neural Network</p>	<p>Notes: https://disp-ds.univ-lyon2.fr/owncloud/f/1382964 Recorded lecture for Training of Trainers: Link: https://utm.webex.com/utm/ldr.php?RCID=28214af05d22425e206c8e743c48bc69 Password: yVyExhF5</p>

<p>Artificial Intelligence for Industry</p>	<p>Notes: https://disp-ds.univ-lyon2.fr/owncloud/f/1382961 Recorded lecture for Training of Trainers: Link: https://utm.webex.com/utm/ldr.php?RCID=687e32373fb010fc9f4971ba37f849b2 Password: QpABagE3 Recorded lecture for Training of Students: Link: https://utm.webex.com/utm/ldr.php?RCID=5127b883c795d0b8ad98104e94119524 Password: RjmDMjR7</p>
<p>Advance Machine Learning for Big Data</p>	<p>Notes: https://disp-ds.univ-lyon2.fr/owncloud/f/1382960 Recorded lecture for Training of Trainers: Link: https://utm.webex.com/utm/ldr.php?RCID=fe95f9a3f95e6eedfce8a0c5d238f36f Password: Jgu56PMM</p>
<p>Metaheuristic Optimization</p>	<p>Notes: https://disp-ds.univ-lyon2.fr/owncloud/f/1382962</p>