Student's Presentation: Name…………….,  presentation date: 2024-xx-xx,  e-mail:……. , Topic…………… [galia.weidl@th-ab.de](mailto:galia.weidl@th-ab.de)

Dear Students,

To find the topics **in moodle**, please search for the date or for keywords in the blue title of each section (links are not always working)

***You can also select any other topic of your own choice***. See below (Top 10 Real-world Bayesian Network Applications):

Further topics of your own interest are available here:…

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | presentation date: | Name | e-mail | Student's Presentation:  **Topic** | Reference |
| 1 | 2024-11-13 |  | S...@th-ab.de | Concepts and examples of Bayesian Networks, Icy roads | 2024-11-13: Materials for Student's Presentation on Bayesian Networks - concepts, d-separation. Icy Roads example. <https://moodle.th-ab.de/course/view.php?id=7232#section-8>  Introduction: Concepts and examples of Bayesian Networks  <https://moodle.th-ab.de/pluginfile.php/377743/mod_resource/content/4/Examples_BayesianNetworks_Seminar.pdf> |
| 2 | 2024-11-13 |  | @th-ab.de | Reasoning with Bayesian Networks  Example BN: Where is my bag?  +3 examples | 2024-11-13: Student's Presentation: Reasoning with Bayesian Networks; BN example: Where is my bag?  <https://www.bayesia.com/bayesialab/e-book>  <https://www.bayesia.com/bayesialab/e-book/chapter-4-knowledge-modeling-and-probabilistic-reasoning>  Earlier student’s presentation, that can be used  <https://moodle.th-ab.de/course/view.php?id=7232#section-12> |
| 3 | 2024-11-20 | Santiago torres | @th-ab.de | BN for Food Science | 2024-11-20: Student's Presentation with BN example: Customer Study in Food Science  <https://moodle.th-ab.de/course/view.php?id=7232#section-14>  Can be used for Student's Presentation: Chun Chia Hsu\_BN for Food Science |
| 4 | 2024-11-20 | Isabella Gutierrez | S | BN\_Fire | 2024-11-20: Student's Presentation with BN examples: Fire + some papers on Markov blankets  <https://moodle.th-ab.de/course/view.php?id=7232#section-13>  Can be used for Student's Presentation: FangYuChang\_BN\_Fire  See also in Hugin Manual from your installation directory  <file:///C:/Program%20Files/Hugin%20Expert/HUGIN%209.4%20(x64)/Htmlhelp/pages/Manual/FunctionsAndTools/MarkovBlanket.html> |
| 5 | 2024-11-27 |  | @th-ab.de | - Concepts of Bayesian Networks without Tears  - BN example : Lights & Is the Family\_out | 2024-11-27: Material for Student's Presentation from Article: Bayesian Networks without tears; BN example : Lights & Is the Family\_out Bayesian Networks without Tears. Eugene Charniak  Earlier student’s presentations:  <https://moodle.th-ab.de/course/view.php?id=7232#section-16> |
| 6 | 2024-11-27 |  | s@th-ab.de | Bayes Network Modeling Examples - Asia (the Chest Clinic)   * Diagnostics Cold\_Covid\_Flu | 2024-12-11 BN examples - The chest clinic  <https://moodle.th-ab.de/course/view.php?id=7232#section-27>  2023-12-11 BN examples - The chest clinic   * HUGIN Help --> Help Topics -->  Search --> Modeling Examples --> [Asia (the Chest Clinic)](https://moodle.th-ab.de/course/Asia.html)   + This is one useful example, which we will use to discuss the principles for cognitive modeling of structure and for learning |
| 7 | 2024-12-11 |  | @th-ab.de | Differential Diagnosis of COVID-19 - using Bayesian Networks | 2024-12-11: Differential Diagnosis of COVID-19 - using Bayesian Networks & mobile phone App  <https://moodle.th-ab.de/course/view.php?id=7232#section-19>  possible to use earlier student’s presentation |
| 8 | 2024-12-11 |  | s@th-ab.de | Diabetes Medical Diagnostics | 2024-12-11: Student's presentation/ Diabetes Medical Diagnostics  <https://moodle.th-ab.de/course/view.php?id=7232#section-20> |
| 9 | 2024-12-11 |  | s@th-ab.de | Insurance fraud detection | 2024-12-11: BN example on Insurance fraud detection  <https://moodle.th-ab.de/course/view.php?id=7232#section-29>  Earlier student’s presentation |
| 10 | 2024-12-11 |  | S@th-ab.de | Object-oriented BNs OOBN Applications. | 2024-12-11: Principles of Building Large Scale Bayesian Networks (BNs). Object-oriented BNs OOBN Applications  <https://moodle.th-ab.de/course/view.php?id=7232#section-31> |
| 11 | 2024-11-13 |  | [S@th-ab.de](mailto:S@th-ab.de) | Learn and predict the outcome of future USA presidential elections | Modeling the thirteen Keys to the White House.  <https://moodle.th-ab.de/course/view.php?id=7232#section-26>  Paper available and can be extended with literature study on similar topics and methods. |
| 12 | 2024-11-27 |  | [S@th-ab.de](mailto:S@th-ab.de) | Learning Assistant Systems | You can read and present 2 papers:  1) Classification of learning style  <https://www.researchgate.net/publication/371693439_Learning_Style_Classification_by_Using_Bayesian_Networks_Based_on_the_Index_of_Learning_Style>  2)When to interact with learners  <https://www.researchgate.net/publication/2915103_Choosing_When_to_Interact_with_Learners> |
| 13 | 2024-11-27 |  | S@th-ab.de | Top 10 Real-world Bayesian Network Applications | Further topics of your own interest are available here:  <https://data-flair.training/blogs/bayesian-network-applications/> |
| 14 | 2024-12-18 | ? | @th-ab.de | Object-oriented BNs OOBN Applications  - Example: Applications of object-oriented Bayesian networks for condition monitoring, root cause analysis and decision support on operation of complex continuous processes | HUGIN Help --> Help Topics -->  Search --> [**Introduction to Object-Oriented Networks**](about:blankpages/Tutorials/ObjectOrientedBayesianNetwork/IntroductionToObjectOrientedNetworks.html)   * [**How to Build an Object-Oriented Bayesian Network**](about:blankpages/Tutorials/ObjectOrientedBayesianNetwork/HowToBuildAnObjectOrientedBayesianNetwork.html)   <https://moodle.th-ab.de/course/view.php?id=7232#section-33> |
| 15 | 2024-12-18  2025-01-08  2025-01-15 | ? | @th-ab.de | BN to find the root causes of congestions  (if you are taking both courses: 7525 & 7540, i.e.  \_**Course 7525**: Cognitive and object-oriented modeling under uncertainties as aspects of artificial intelligence in practical applications  \_**Course 7540**: Artificial intelligence in applications. Modeling, Machine Learning and Data Classifier Performance) | <https://moodle.th-ab.de/course/view.php?id=7231#section-9>  Based on existing work and available data, continue the analysis of congestions  - How to read the paper on "Idoms"? How to prepare your own application of BNs?  <https://moodle.th-ab.de/course/view.php?id=7232#section-21>  - Presentation of Free selected topics  - Preparation for your own presentation at the exam (20 min) "How to choose the right idiom to build a suitable application?" |
| 16 | 2025-01-08 | ? | @th-ab.de | OOBN for condition monitoring, root cause analysis and decision support | 2025-01-08 Student's presentation/ Root Cause Analysis// Applications of object-oriented Bayesian networks for condition monitoring, root cause analysis and decision support on operation of complex continuous processes |
| 17 | 2025-01-08 | ? | @th-ab.de | BN Applications in Quality Management | Available for 2025-01-08: Student's Presentation: Quality Management  <https://moodle.th-ab.de/course/view.php?id=7232#section-32> |
| 18 | 2025-01-15 | ? | @th-ab.de | BN Applications in Environmental Risk Assessment | Students presentation on BN Applications in Environmental Risk Assessment  <https://moodle.th-ab.de/course/view.php?id=7232#section-22> |
| 19 | 2025-01-15 | ? | S240094@th-ab.de | LIMIDS  Or free selected topic | HUGIN Help --> Help Topics -->  Search --> [**Introduction to (Limited Memory) Influence Diagrams**](about:blankpages/Tutorials/LIMID/IntroductionToLimitedMemoryInfluenceDiagrams.html) |
| 20 | 2025-01-15 | ? | @th-ab.de | LIMIDS  Or free selected topic | HUGIN Help --> Help Topics -->  Search --> [**How to Build a (Limited Memory) Influence Diagram**](about:blankpages/Tutorials/LIMID/HowToBuildALimitedMemoryInfluenceDiagram.html) |
|  | 2025-01-21  14:00–19:00  2025-01-22  8:00– 18:00 | EXAM |  |  |  |
| Student’s presentation topics for Machine Learning with Bayesian Networks (Course 7540) | | | | | |
|  |  | ? |  | BN Structure Learning | <https://download.hugin.com/webdocs/manuals/9.5/pages/Tutorials/Structure_EM_Adaptation_Learning/StructureLearningTutorial.html>  Link on your own computer:  <file:///C:/Program%20Files/Hugin%20Expert/HUGIN%209.5%20(x64)/Htmlhelp/pages/Tutorials/Structure_EM_Adaptation_Learning/StructureLearningTutorial.html> |
|  |  | ? |  | EM\_Learning of BN parameters | <https://download.hugin.com/webdocs/manuals/9.5/pages/Tutorials/Structure_EM_Adaptation_Learning/EM_LearningTutorial.html>  Link on your own computer:  <file:///C:/Program%20Files/Hugin%20Expert/HUGIN%209.5%20(x64)/Htmlhelp/pages/Tutorials/Structure_EM_Adaptation_Learning/EM_LearningTutorial.html> |
|  |  | ? |  | Adaptation of BN parameters | <https://download.hugin.com/webdocs/manuals/9.5/pages/Tutorials/Structure_EM_Adaptation_Learning/AdaptationTutorial.html>  Link on your own computer:  <file:///C:/Program%20Files/Hugin%20Expert/HUGIN%209.5%20(x64)/Htmlhelp/pages/Tutorials/Structure_EM_Adaptation_Learning/AdaptationTutorial.html> |
|  | 2025-01-08  2025-01-15 |  |  | Traffic Applications |  |