

Program BNAIC/Benelearn 2018

JADS, 's-Hertogenbosch

November 08–09, 2018

Program at a glance

| Thursday, November 08 | |
|-----------------------|---|
| 08.00–08.45 | * |
| 08.45–09.00 | Opening |
| 09.00–10.00 | Keynote Hinrich Schütze |
| 10.00–11.00 | Learning 1 Agents Games Benelearn 1 |
| 11.00–11.30 | Coffee break |
| 11.30–12.30 | Learning 2 Robots & Intelligent Systems Explainable AI Benelearn 2 |
| 12.30–14.00 | Lunch KION meeting |
| 14.00–15.00 | FACT session |
| 15.00–16.00 | Keynote Rushed Kanawati |
| 16.00–16.30 | Coffee break |
| 16.30–17.30 | Learning 3 Social & User Modeling Topic Modeling Explainable AI / TNO |
| 18.00–21.00 | Conference dinner |
| Friday, November 09 | |
| 08.00–08.30 | * |
| 08.30–09.30 | Keynote Gemma Boleda |
| 09.30–10.00 | Coffee break |
| 10.00–11.00 | Reinforcement Learning 1 Data & Retrieval BNAIC Benelearn PS Industry 1 |
| 11.00–12.00 | Reinforcement Learning 2 Mixed Spotlights Benelearn 3 Industry 2 |
| 12.00–13.30 | Lunch IPN SIGAI meeting |
| 13.30–14.30 | Keynote Eyke Hüllermeier |
| 14.30–15.00 | Coffee break |
| 14.30–16.00 | Posters and demos |
| 15.00–16.00 | BNVKI General Assembly Industry Keynote Lukas Vermeer |
| 16.00–17.00 | Award session and closing remarks |

* Venue is open for registration and mingling with your fellow scientists.

Contributed sessions in detail

Learning 1

Chair: Leander Schietgat (Thursday, 10.00-11.00)

- 10.00-10.20 Lynn Houthuys, Rocco Langone and Johan A. K. Suykens: *Multi-View Least Squares Support Vector Machines Classification*
- 10.20-10.40 Thomas Moerland, Joost Broekens, Aske Plaat and Catholijn Jonker: *Alpha Zero in Continuous Action Space: Extended Abstract*
- 10.40-11.00 Yasmina Kada and Bert Bredeweg: *Automating Reference-based Feedback for Learning Conceptual Knowledge*

Agents

Chair: Martijn van Otterlo (Thursday, 10.00-11.00)

- 10.00-10.20 Jasper van Tilburg and Neil Yorke-Smith: *Strategies for the Iterated Prisoner's Dilemma in a Natural Environment*
- 10.20-10.40 Laura van der Lubbe, Charlotte Gerritsen, Daniel Formolo, Marco Otte and Tibor Bosse: *An Application for Training Verbal Resilience to Doorstep Scams using Virtual Agents*
- 10.40-11.00 Fabián Guevara, Maarten Stol and Shaojie Jang: *Task-Oriented Dialog Agents Using Memory-Networks and Ensemble Learning*

Games

Chair: Jaap van den Herik (Thursday, 10.00-11.00)

- 10.00-10.20 Hui Wang, Michael Emmerich and Aske Plaat: *Assessing the Potential of Classical Q-learning in General Game Playing*
- 10.20-10.40 Jan van Rijn, Frank Takes and Jonathan Vis: *Computing and Predicting Winning Hands in the Trick-Taking Game of Klaverjas*

Benelearn 1

Chair: Frans Oliehoek (Thursday, 10.00-11.00)

- 10.00-10.20 Merel Jung, Bram van den Berg, Eric Postma and Willem Huijbers: *Inferring PET from MRI with pix2pix*
- 10.20-10.40 Francesco Dal Canton, Vincent Quinten and Marco Wiering: *Early Detection of Sepsis Induced Deterioration Using Machine Learning*

Learning 2

Chair: Tom Lenaerts (Thursday, 11.30-12.30)

- 11.30-11.50 Pieter Libin, Timothy Verstraeten, Diederik M. Roijers, Jelena Grujic, Kristof Theys, Philippe Lemey and Ann Nowe: *Selecting Influenza Mitigation Strategies Using Bayesian Bandits*
- 11.50-12.10 Marysia Winkels, Diederik Roijers, Emi Yamamoto, Richard Pronk, Edwin Odijk and Maarten de Jonge: *Challenge Balancing for a Kanji E-Tutoring System*
- 12.10-12.30 Osman Ülger, Maarten Stol and Thomas E. J. Mensink: *Evaluating the effectiveness of adversarial patch attacks on convolutional neural networks*

Robots & Intelligent Systems

Chair: Arnoud Visser (Thursday, 11.30-12.30)

- 11.30-11.50 Ruben van Heusden: *Making a robot stop a penalty*
- 11.50-12.10 Lenin Medeiros and Tibor Bosse: *An Intelligent Conversational Bot to Help Users Cope with Stress Online*
- 12.10-12.30 Jens Nevens, Roxana Radulescu, Mathieu Reymond, Paul Van Eecke, Kyriakos Efthymiadis and Katrien Beuls: *Hybrid AI for Visual Question Answering on CLEVR*

Explainable AI

Chair: Eric Postma (Thursday, 11.30-12.30)

- 11.30-11.50 Laurens Weitkamp, Elise van der Pol and Zeynep Akata: *Visual Rationalizations of A3C Networks*
- 11.50-12.10 Martijn Van Otterlo: *From Algorithmic Black Boxes to Adaptive White Boxes: Declarative Decision-Theoretic Ethical Programs as Codes of Ethics*
- 12.10-12.20 Spyroula Masiala and Martin Atzmueller: *Explainable Complex Network Analysis* (short talk)
- 12.20-12.30 Siddarth Ravi, Vlado Menkovski, and Henry Brighton: *Generating Post-Hoc Explanations for Neural Networks Through Concept Mapping* (short talk)

Benelearn 2

Chair: Willem Huijbers (Thursday, 11.30-12.30)

- 11.30-11.50 Nazly Santos Buitrago, Loek Tonnaer, Vlado Menkovski and Dimitrios Mavroeidis: *Anomaly Detection for imbalanced datasets with Deep Generative Models*
- 11.50-12.10 Daniel Peralta, Isaac Triguero Velázquez, Salvador García, Yvan Saeys, José M. Benítez and Francisco Herrera: *On the use of convolutional neural networks for robust classification of multiple fingerprint captures*
- 12.10-12.30 Joris Roels, Julian Hennies, Wilfried Philips, Yvan Saeys and Anna Kreshuk: *Towards high throughput volume electron microscopy segmentation through deep domain adaptation*

FAcT Session

(Thursday, 14.00-15.00)

- 14.00-14.20 Bert Kappen: *Deep learning: it is time for something different*
- 14.20-14.40 Ann Nowé: *Towards explainable reinforcement learning*
- 14.40-15.00 Koen Hindriks: *Integrating System 1 and 2*

Learning 3

Chair: Neil Yorke-Smith (Thursday, 16.30-17.30)

- 16.30-16.50 Ralph Foorthuis: *The Impact of Discretization Method on the Detection of Six Types of Anomalies in Datasets*
- 16.50-17.10 Les De Ridder and Thijs Vercammen: *Deriving Formulas for Integer Sequences Using Inductive Programming*
- 17.10-17.30 Mark Voschezang: *Style transfer of abstract drum patterns using a light-weight hierarchical autoencoder*

Social & User Modeling

Chair: Tibor Bosse (Thursday, 16.30-17.30)

- 16.30-16.50 Seyyed Hadi Hashemi and Jaap Kamps: *Exploiting Behavioral User Models for Point of Interest Recommendation in Smart Museums*
- 16.50-17.10 Stefan Bloemheugel, Martin Atzmueller and Marie Postma: *Evolution of Contacts and Communities in Social Interaction Networks of Face-to-Face Proximity*

Topic Modeling

Chair: Kalliopi Zervanou (Thursday, 16.30-17.30)

- 16.30-16.50 Andrew Hendrickson, Jason Wang and Martin Atzmueller: *Identifying Exceptional Descriptions of People using Topic Modeling and Subgroup Discovery*
- 16.50-17.10 Naomi Hariman, Marjolein de Vries and Ionica Smeets: *Topic Modeling for Exploring Cancer-Related Coverage in Journalistic Texts*

Explainable AI / TNO

Chair: Koen Hindriks (Thursday, 16.30-17.30)

- 16.30-17.30 Jasper van der Waa: *Model-agnostic methods for more transparent decision support systems with Machine Learning components and issues that arise when applying these methods to real-world use cases.*

Reinforcement Learning 1

Chair: Mehdi Dastani (Friday, 10.00-11.00)

- 10.00-10.20 Roxana Radulescu, Manon Legrand, Kyriakos Efthymiadis, Diederik M. Roijers and Ann Nowe: *Deep Multi-Agent Reinforcement Learning in a Homogeneous Open Population*
- 10.20-10.40 Denis Steckelmacher, Diederik M. Roijers, Anna Harutyunyan, Peter Vrancx, Hélène Plisnier and Ann Nowé: *Reinforcement Learning in POMDPs with Memoryless Options and Option-Observation Initiation Sets*
- 10.40-11.00 Evertjan Peer, Yingqian Zhang, Vlado Menkovski, Wan-Jui Lee and Bob Huisman: *Shunting Trains with Deep Reinforcement Learning*

Data & Retrieval

Chair: Merel Jung (Friday, 10.00-11.00)

- 10.00-10.20 Bart Bogaerts and Luís Cruz-Filipe: *Fixpoint Semantics for Active Integrity Constraints: Extended Abstract*
- 10.20-10.40 Mostafa Dehghani and Jaap Kamps: *From Neural Re-Ranking to Neural Ranking: Learning a Sparse Representation for Inverted Indexing*
- 10.40-11.00 Johan Kwisthout: *Finding dissimilar explanations in Bayesian networks: Complexity results*

Industry 1

Chair: Arjan Haring (Friday, 10.00-11.00)

- 10.00-10.30 Hugo Koopmans, DIKW: *Sensing Clues: turning wild spaces into safe havens*
- 10.30-11.00 Alexis Kuzmenkov, Deepdee: *Computer vision and deep learning system for retinal images processing*

Reinforcement Learning 2

Chair: Yingqian Zhang (Friday, 11.00-12.00)

- 11.00-11.20 Tim Molderez, Bjarno Oeyen and Wolfgang De Meuter: *A Domain-Specific Language for Multi-Agent Reinforcement Learning in Distributed Systems*
- 11.20-11.40 Axel Abels, Diederik M. Roijers and Tom Lenaerts: *Thesis abstract: Dynamic Weights in Multi-Objective Deep Reinforcement Learning*

Mixed

Chair: Ramon van den Akker (Friday, 11.00-12.00)

- 11.00-11.20 Emma Beauxis-Aussalet and Lynda Hardman: *Extended Methods to Handle Classification Biases*
- 11.20-11.40 Sebastiaan Merino and Martin Atzmueller: *Behavioral Topic Modeling on Naturalistic Driving Data*
- 11.40-12.00 Neil Yorke-Smith: *GoCo: Planning Expressive Commitment Protocols (Article Abstract)*

Industry 2

Chair: Arjan Haring (Friday, 11.00-12.00)

- 11.00-11.30 Noël Lüneberg and Marten Schutten, Target Holding: *Experimental approaches for classifying wound infection image data using deep convolutional neural networks*
- 11.30-12.00 Sander Wubben, Flow.ai: *Creating advanced conversational AI with Flow.ai*

Benelearn 3

Chair: Joris Roels (Friday, 11.00-12.00)

- 11.00-11.20 Frans Oliehoek, Rahul Savani, Jose Gallego, Elise van der Pol and Roderich Gross: *Beyond Local Nash Equilibria for Adversarial Networks*
- 11.20-11.40 Evgeniya Korneva and Hendrik Blockeel: *Model Selection for Multi-Directional Ensemble of Regression and Classification Trees*

Spotlight Sessions

(Friday, 10.00-11.00)

Benelearn Posters

Ákos Kádár, Desmond Elliott, Marc-Alexandre Côté, Grzegorz Chrupała and Afra Alishahi: *Lessons learned in multilingual grounded language learning*

Maarten van Hees, Peter van der Putten and Maarten H. Lamers: *Disciples of the Heinous Path: Exploring Label Structure in Heavy Metal Genres*

Victor Hamer and Pierre Dupont: *Learning Computationally Efficient Metrics for Large Scale Person Identification*

Lotte Bransen, Michel van de Velden and Jan Van Haaren: *Valuing passes in football using ball event data*

Jose Velasquez Sosa and Gerasimos Spanakis: *Neural Attention and Morphological Word Embedding for Contract Element Extraction*

Antonio Pereira Barata, Gerrit Jan de Bruin, Frank Takes, Jaap van den Herik and Cor Veenman: *Finding Anomalies in Waste Transportation Data with Supervised Category Models*

Frederique van den Boogaart, Thomas Hantke and Martijn van Otterlo: *Predicting next week redemption in a digital frequency loyalty program*

BNAIC Posters & Joint Demos

Injy Sarhan and Marco Spruit: *Uncovering Algorithmic Approaches in Open Information Extraction: A Literature Review*

Benedikt Heinrichs and Johannes Scholtes: *Detecting Anomalous Events over Time Using RDF Triple Extraction and a Dynamic Implementation of OddBall*

Yaqiong Zheng, Siwen Guo and Christoph Schommer: *An Approach to Incorporate Emotions in a Chatbot with Seq2Seq Model*

Rijk Mercur, John Bruntse Larsen and Virginia Dignum: *Modelling the Social Practices of an Emergency Room to Ensure Staff and Patient Wellbeing*

Luc Steels, Paul Van Eecke and Katrien Beuls: *Usage-based learning of grammatical categories*

Chiara F. Sironi and Mark H. M. Winands: *On-line Parameter Tuning for Monte-Carlo Tree Search in General Game Playing*

Davide Dell Anna, Mehdi Dastani and Fabiano Dalpiaz: *Runtime Norm Revision using Bayesian Networks*

Pieter Libin, Laurens Hernalsteen, Kristof Theys, Perpetua Gomez, Ana Abecasis and Ann Nowe: *Bayesian inference of set-point viral load transmission models*

Jason Rhuggenaath, Yingqian Zhang, Alp Akcay, Uzay Kaymak and Sicco Verwer: *Learning fuzzy decision trees using integer optimization*

Johan Korten and Egon van den Broek: *An automated patient simulator for cardiopulmonary resuscitation training*

Romy Blankendaal, Charlotte Gerritsen, Marco Otte and Tibor Bosse: *A Virtual Reality Application for Aggression De-escalation Training in Public Transport*

Caro Fuchs, Anna Wilbik and Uzay Kaymak: *Towards More Specific Membership Functions for Data-Driven Fuzzy Models*

Rolf Starre: *Action Selection Policies for Walking Monte Carlo Tree Search*

Timothy van Bremen, Wannes Meert and Luc De Raedt: *Efficient Cardinality Constraints in ProbLog*

Siamak Mehrkanoon, Xiaolin Huang and Johan Suykens: *Indefinite Kernel Spectral Learning*

Jos Uiterwijk and Lando Kroes: *Combining Combinatorial Game Theory with an alpha-beta Solver for Cram*

Rémi Delanghe, Pieterjan Criel and Tom Dhaene: *Periodic Reranking Strategy in Unsupervised Recommender Systems*

Laura van der Lubbe, Charlotte Gerritsen, Daniel Formolo, Marco Otte and Tibor Bosse: *An Application for Training Verbal Resilience to Doorstep Scams using Virtual Agents*

Lenin Medeiros and Tibor Bosse: *An Intelligent Conversational Bot to Help Users Cope with Stress Online*

Jens Nevens, Roxana Radulescu, Mathieu Reymond, Paul Van Eecke, Kyriakos Efthymiadis and Katrien Beuls: *Hybrid AI for Visual Question Answering on CLEVR*

Tim Molderez, Bjarno Oeyen and Wolfgang De Meuter: *A Domain-Specific Language for Multi-Agent Reinforcement Learning in Distributed Systems*

Thursday Evening Social Session: conference dinner @ Bolwerk

18.00-21.00 Conference dinner

The conference dinner will take place at:

Bolwerk Den Bosch Brasserie Restaurant

Sint Janssingel 18

5211 DA 's-Hertogenbosch

See <http://www.bolwerkdenbosch.nl> for details. Participation is included in all registration fees.