

- 763, TITLE: Earliest-Completion Scheduling of Contract Algorithms with End Guarantees
<https://www.ijcai.org/proceedings/2019/763>
AUTHORS: Spyros Angelopoulos, Shendan Jin
HIGHLIGHT: In this work we show how to optimize the time at which the system reaches a desired performance objective, while maintaining interruptible guarantees throughout the entire execution.
- 764, TITLE: Finding Optimal Solutions in HTN Planning - A SAT-based Approach
<https://www.ijcai.org/proceedings/2019/764>
AUTHORS: Gregor Behnke, Daniel Höller, Susanne Biundo
HIGHLIGHT: We show how the currently best-performing approach to HTN planning - the translation into propositional logic - can be utilised to find optimal plans.
- 765, TITLE: Faster Dynamic Controllability Checking in Temporal Networks with Integer Bounds
<https://www.ijcai.org/proceedings/2019/765>
AUTHORS: Nikhil Bhargava, Brian C. Williams
HIGHLIGHT: Our work improves the runtime of checking the dynamic controllability of STNUs with integer bounds to $O(\min(mn, m \sqrt{n}) \log N) + km + k^2n + kn \log n$.
- 766, TITLE: Regular Decision Processes: A Model for Non-Markovian Domains
<https://www.ijcai.org/proceedings/2019/766>
AUTHORS: Ronen I. Brafman, Giuseppe De Giacomo
HIGHLIGHT: We introduce and study Regular Decision Processes (RDPs), a new, compact, factored model for domains with non-Markovian dynamics and rewards.
- 767, TITLE: Strong Fully Observable Non-Deterministic Planning with LTL and LTLf Goals
<https://www.ijcai.org/proceedings/2019/767>
AUTHORS: Alberto Camacho, Sheila A. McIlraith
HIGHLIGHT: In this paper we introduce novel algorithms to compute so-called strong solutions, that guarantee goal satisfaction even in the absence of fairness.
- 768, TITLE: Counterexample-Guided Strategy Improvement for POMDPs Using Recurrent Neural Networks
<https://www.ijcai.org/proceedings/2019/768>
AUTHORS: Steven Carr, Nils Jansen, Ralf Wimmer, Alexandru Serban, Bernd Becker, Ufuk Topcu
HIGHLIGHT: We propose a novel method that combines techniques from machine learning and formal verification.
- 769, TITLE: Influence of State-Variable Constraints on Partially Observable Monte Carlo Planning
<https://www.ijcai.org/proceedings/2019/769>
AUTHORS: Alberto Castellini, Georgios Chalkiadakis, Alessandro Farinelli
HIGHLIGHT: In this paper, we propose the introduction of prior knowledge in the form of (probabilistic) relationships among discrete state-variables, for online planning based on the well-known POMCP algorithm.
- 770, TITLE: Online Probabilistic Goal Recognition over Nominal Models
<https://www.ijcai.org/proceedings/2019/770>
AUTHORS: Ramon Fraga Pereira, Mor Vered, Felipe Meneguzzi, Miquel Ramírez
HIGHLIGHT: This paper revisits probabilistic, model-based goal recognition to study the implications of the use of nominal models to estimate the posterior probability distribution over a finite set of hypothetical goals.
- 771, TITLE: Generalized Potential Heuristics for Classical Planning
<https://www.ijcai.org/proceedings/2019/771>
AUTHORS: Guillem Francès, Augusto B. Corrêa, Cedric Geissmann, Florian Pommerening
HIGHLIGHT: In this paper, we show that several interesting planning domains possess compact generalized heuristics that can guide a greedy search in guaranteed polynomial time to the goal, and which work for any instance of the domain.
- 772, TITLE: Subgoal-Based Temporal Abstraction in Monte-Carlo Tree Search
<https://www.ijcai.org/proceedings/2019/772>
AUTHORS: Thomas Gabor, Jan Peter, Thomy Phan, Christian Meyer, Claudia Linnhoff-Popien
HIGHLIGHT: We propose an approach to general subgoal-based temporal abstraction in MCTS.
- 773, TITLE: Fair Online Allocation of Perishable Goods and its Application to Electric Vehicle Charging
<https://www.ijcai.org/proceedings/2019/773>

AUTHORS: Enrico H. Gerding, Alvaro Perez-Diaz, Haris Aziz, Serge Gaspers, Antonia Marcu, Nicholas Mattei, Toby Walsh
HIGHLIGHT: We consider mechanisms for the online allocation of perishable resources such as energy or computational power.

774, TITLE: Dynamic logic of parallel propositional assignments and its applications to planning
<https://www.ijcai.org/proceedings/2019/774>
AUTHORS: Andreas Herzig, Frédéric Maris, Julien Vianey
HIGHLIGHT: We introduce a dynamic logic with parallel composition and two kinds of nondeterministic composition, exclusive and inclusive.

775, TITLE: Approximability of Constant-horizon Constrained POMDP
<https://www.ijcai.org/proceedings/2019/775>
AUTHORS: Majid Khonji, Ashkan Jasour, Brian Williams
HIGHLIGHT: Our first contribution is a reduction from CC-POMDP to C-POMDP and a novel Integer Linear Programming (ILP) formulation.

776, TITLE: Bayesian Inference of Linear Temporal Logic Specifications for Contrastive Explanations
<https://www.ijcai.org/proceedings/2019/776>
AUTHORS: Joseph Kim, Christian Muise, Ankit Shah, Shubham Agarwal, Julie Shah
HIGHLIGHT: In this paper, we examine the problem of inferring specifications that describe temporal differences between two sets of plan traces.

777, TITLE: Partitioning Techniques in LTLf Synthesis
<https://www.ijcai.org/proceedings/2019/777>
AUTHORS: Lucas Martinelli Tabajara, Moshe Y. Vardi
HIGHLIGHT: In this work, however, we expose fundamental limitations of partitioning that hinder its effective application to symbolic LTLf synthesis.

778, TITLE: Adaptive Thompson Sampling Stacks for Memory Bounded Open-Loop Planning
<https://www.ijcai.org/proceedings/2019/778>
AUTHORS: Thomy Phan, Thomas Gabor, Robert Müller, Christoph Roch, Claudia Linnhoff-Popien
HIGHLIGHT: We propose Stable Yet Memory Bounded Open-Loop (SYMBOL) planning, a general memory bounded approach to partially observable open-loop planning.

779, TITLE: A Novel Distribution-Embedded Neural Network for Sensor-Based Activity Recognition
<https://www.ijcai.org/proceedings/2019/779>
AUTHORS: Hangwei Qian, Sinno Jialin Pan, Bingshui Da, Chunyan Miao
HIGHLIGHT: In this paper, we propose a novel deep learning model to automatically learn meaningful features including statistical features, temporal features and spatial correlation features for activity recognition in a unified framework.

780, TITLE: Pattern Selection for Optimal Classical Planning with Saturated Cost Partitioning
<https://www.ijcai.org/proceedings/2019/780>
AUTHORS: Jendrik Seipp
HIGHLIGHT: We introduce a new method that uses saturated cost partitioning to select patterns and show that it outperforms all existing pattern selection algorithms.

781, TITLE: Scheduling Jobs with Stochastic Processing Time on Parallel Identical Machines
<https://www.ijcai.org/proceedings/2019/781>
AUTHORS: Richard Stec, Antonin Novak, Premysl Sucha, Zdenek Hanzalek
HIGHLIGHT: In this paper, we study a classical parallel machine scheduling problem where the processing time of jobs is given by a normal distribution.

782, TITLE: On Computational Complexity of Pickup-and-Delivery Problems with Precedence Constraints or Time Windows
<https://www.ijcai.org/proceedings/2019/782>
AUTHORS: Xing Tan, Jimmy Xiangji Huang
HIGHLIGHT: That is, we propose a local-search formalism and algorithm for solving PDPC problems in particular.

783, TITLE: Merge-and-Shrink Task Reformulation for Classical Planning

<https://www.ijcai.org/proceedings/2019/783>

AUTHORS: Álvaro Torralba, Silvan Sievers

HIGHLIGHT: In this paper, we represent tasks as factored transition systems (FTS), and use the merge-and-shrink (M&S) framework for task reformulation for optimal and satisficing planning.

784, TITLE: Steady-State Policy Synthesis for Verifiable Control

<https://www.ijcai.org/proceedings/2019/784>

AUTHORS: Alvaro Velasquez

HIGHLIGHT: In this paper, we introduce the Steady-State Policy Synthesis (SSPS) problem which consists of finding a stochastic decision-making policy that maximizes expected rewards while satisfying a set of asymptotic behavioral specifications.

785, TITLE: Energy-Efficient Slithering Gait Exploration for a Snake-Like Robot Based on Reinforcement Learning

<https://www.ijcai.org/proceedings/2019/785>

AUTHORS: Zhenshan Bing, Christian Lemke, Zhuangyi Jiang, Kai Huang, Alois Knoll

HIGHLIGHT: In this work, we present a novel approach for designing an energy-efficient slithering gait for a snake-like robot using a model-free reinforcement learning (RL) algorithm.

786, TITLE: The Parameterized Complexity of Motion Planning for Snake-Like Robots

<https://www.ijcai.org/proceedings/2019/786>

AUTHORS: Siddharth Gupta, Guy Sa'ar, Meirav Zehavi

HIGHLIGHT: Given a "snake-like" robot with initial and final positions in an environment modeled by a graph, our goal is to decide whether the robot can reach the final position from the initial position without intersecting itself.

787, TITLE: Unsupervised Learning of Monocular Depth and Ego-Motion using Conditional PatchGANs

<https://www.ijcai.org/proceedings/2019/787>

AUTHORS: Madhu Vankadari, Swagat Kumar, Anima Majumder, Kaushik Das

HIGHLIGHT: This paper presents a new GAN-based deep learning framework for estimating absolute scale aware depth and ego motion from monocular images using a completely unsupervised mode of learning.

788, TITLE: Region Deformer Networks for Unsupervised Depth Estimation from Unconstrained Monocular Videos

<https://www.ijcai.org/proceedings/2019/788>

AUTHORS: Hao-fei Xu, Jianmin Zheng, Jianfei Cai, Juyong Zhang

HIGHLIGHT: In this paper, we propose a new learning based method consisting of DepthNet, PoseNet and Region Deformer Networks (RDN) to estimate depth from unconstrained monocular videos without ground truth supervision.

789, TITLE: Statistical Guarantees for the Robustness of Bayesian Neural Networks

<https://www.ijcai.org/proceedings/2019/789>

AUTHORS: Luca Cardelli, Marta Kwiatkowska, Luca Laurenti, Nicola Paoletti, Andrea Patane, Matthew Wicker

HIGHLIGHT: We introduce a probabilistic robustness measure for Bayesian Neural Networks (BNNs), defined as the probability that, given a test point, there exists a point within a bounded set such that the BNN prediction differs between the two.

790, TITLE: Lifted Message Passing for Hybrid Probabilistic Inference

<https://www.ijcai.org/proceedings/2019/790>

AUTHORS: Yuqiao Chen, Nicholas Ruozi, Sriraam Natarajan

HIGHLIGHT: In this work, we consider the problem of lifted inference in MLNs with continuous or both discrete and continuous groundings.

791, TITLE: Bayesian Parameter Estimation for Nonlinear Dynamics Using Sensitivity Analysis

<https://www.ijcai.org/proceedings/2019/791>

AUTHORS: Yi Chou, Sriram Sankaranarayanan

HIGHLIGHT: We investigate approximate Bayesian inference techniques for nonlinear systems described by ordinary differential equation (ODE) models.

792, TITLE: Thompson Sampling on Symmetric Alpha-Stable Bandits

<https://www.ijcai.org/proceedings/2019/792>

AUTHORS: Abhimanyu Dubey, Alex 'Sandy' Pentland

HIGHLIGHT: In this paper, we revisit the Thompson Sampling algorithm under rewards drawn from symmetric alpha-stable distributions, which are a class of heavy-tailed probability distributions utilized in finance and economics, in problems such as modeling stock prices and human behavior.

- 793, TITLE: On Constrained Open-World Probabilistic Databases
<https://www.ijcai.org/proceedings/2019/793>
AUTHORS: Tal Friedman, Guy Van den Broeck
HIGHLIGHT: We propose overcoming these issues by using constraints to restrict this open world.
- 794, TITLE: An End-to-End Community Detection Model: Integrating LDA into Markov Random Field via Factor Graph
<https://www.ijcai.org/proceedings/2019/794>
AUTHORS: Dongxiao He, Wenze Song, Di Jin, Zhiyong Feng, Yuxiao Huang
HIGHLIGHT: This paper integrates LDA into MRF to form an end-to-end learning system where their parameters can be trained jointly.
- 795, TITLE: Exact Bernoulli Scan Statistics using Binary Decision Diagrams
<https://www.ijcai.org/proceedings/2019/795>
AUTHORS: Masakazu Ishihata, Takanori Maehara
HIGHLIGHT: In this study, we restrict our attention to the case that the number of data points is moderately small (e.g., 50), the outcome is binary, and the underlying combinatorial structure is represented by a zero-suppressed binary decision diagram (ZDD), and consider the problem of computing the p-value of the combinatorial scan statistics exactly.
- 796, TITLE: Hyper-parameter Tuning under a Budget Constraint
<https://www.ijcai.org/proceedings/2019/796>
AUTHORS: Zhiyun Lu, Liyu Chen, Chao-Kai Chiang, Fei Sha
HIGHLIGHT: We formulate the task into a sequential decision making problem and propose a solution, which uses a Bayesian belief model to predict future performances, and an action-value function to plan and select the next configuration to run.
- 797, TITLE: Cutset Bayesian Networks: A New Representation for Learning Rao-Blackwellised Graphical Models
<https://www.ijcai.org/proceedings/2019/797>
AUTHORS: Tahrira Rahman, Shasha Jin, Vibhav Gogate
HIGHLIGHT: In this paper, we seek to further explore this trade-off between generalization performance and inference accuracy by proposing a novel, partially tractable representation called cutset Bayesian networks (CBNs).
- 798, TITLE: Ranked Programming
<https://www.ijcai.org/proceedings/2019/798>
AUTHORS: Tjitze Rienstra
HIGHLIGHT: In this paper we combine probabilistic programming methodology with ranking theory and develop a ranked programming language.
- 799, TITLE: ISLF: Interest Shift and Latent Factors Combination Model for Session-based Recommendation
<https://www.ijcai.org/proceedings/2019/799>
AUTHORS: Jing Song, Hong Shen, Zijiang Ou, Junyi Zhang, Teng Xiao, Shangsong Liang
HIGHLIGHT: In this paper, we propose a novel model, Interest Shift and Latent Factors Combination Model (ISLF), which can capture the user's main intention by taking into account the user's interest shift (i.e. long-term and short-term interest) and latent factors simultaneously.
- 800, TITLE: DiffChaser: Detecting Disagreements for Deep Neural Networks
<https://www.ijcai.org/proceedings/2019/800>
AUTHORS: Xiaofei Xie, Lei Ma, Haijun Wang, Yuekang Li, Yang Liu, Xiaohong Li
HIGHLIGHT: This paper proposes DiffChaser, an automated black-box testing framework to detect untargeted/targeted disagreements between version variants of a DNN.