EDITOR'S AWARD

We have the pleasure to announce that the honorary *Editor's Award*[1] for the year 2016 has been conferred on the papers

- R. Israel Ortega-Gutiérrez, Raúl Montes-de-Oca and Enrique Lemus-Rodríguez. *Uniqueness of optimal policies as a generic property of discounted Markov decision processes: Ekeland's variational principle approach.* Kybernetika 52 (2016), 1, 66–75.
- Peter Harremoës. *Bounds on tail probabilities for negative binomial distributions.* Kybernetika 52 (2016), 6, 943–966.

Let us introduce here the authors of the awarded paper *Uniqueness of optimal policies as a generic property of discounted Markov decision processes: Ekeland's variational principle approach.*

R. Israel Ortega-Gutiérrez was born in Puebla, Mexico, on July 17, 1986. He received the Bachelors degree in Applied Mathematics by the Benemérita Universidad Autónoma de Puebla (BUAP) in 2009 and the Masters degree in mathematical sciences by the same University in 2011. He is currently a part-time Professor at the Department of Actuary, Physics and Mathematics of Universidad de las Americas Puebla (UDLAP). His current research interests include Markov decision processes, dynamic programming, game theory, variational analysis and probability theory.

Raúl Montes-de-Oca received a Ph.D. degree in Sciences (Mathematics) by Metropolitan Autonomous University, Iztapalapa Campus, Mexico, in 1994. He is currently a full-time Professor and a Researcher at the Department of Mathematics of this University. He has published more than 40 research papers in international journals and has supervised 7 thesis in mathematics at the Ph.D level. His research interests include systems theory, control, operations research, mathematical programming, probability, stochastic processes and game theory.

Enrique Lemus-Rodríguez, Applied Mathematics Lecturer and Researcher at Facultad de Ciencias Actuariales, Universidad Anáhuac México. Author himself describes his work as follows: "For the last 25 years, thanks to Professors Onésimo Hernández-Lerma,

[1] See www.kybernetika.cz/award.html for more information about the competition.

Evgueni Gordienko, and Raúl Montes de Oca, I have been interested in well-posedness, robustness, and stability of optimal strategies in Markov Decision Processes. As a next step, I would like to assess how knowledge in these topics may be applied to the actual and systematic construction of Markovian models and the actual computation and implementation of optimal policies. In particular, I would like to apply such methodologies to improve the decision-making capabilities of small agents: individuals, families, small enterprises, and small communities."

The Associate Editor speaks highly of the contribution of the paper:

> "Many examples in optimization, ranging from Linear Programming to Markov Decision Processes, present more than one optimal solution. The study of this non-uniqueness is of great mathematical interest. Using the celebrated Ekeland's variational principle the authors show that under very general assumptions (convexity is not necessary) for a Markov Decision Process with an optimal policy f^*, there exists a Markov Decision Process with a unique optimal policy that coincides with f^*."

The paper *Bounds on tail probabilities for negative binomial distributions* is written by the recognized expert in probability theory and information theory, **Peter Harremoës**[2], senior lecturer at Niels Brock, Copenhagen Business College, Denmark. He is associated editor of IEEE Transactions on Information Theory, and editorial board member of the journal Entropy (former Editor-in-Chief).

Here is how Peter Harremoës himself characterizes his current work: "One of my interests is how to use ideas from information theory to derive results in probability theory. Many of the most important results in probability theory are convergence theorems, and many of these convergence theorems can be reformulated so that they state that the entropy of a system increases to a maximum or that a divergence converges to a minimum. These ideas are also relevant in the theory of statistical tests. Recently I have formalized a method for deriving Jeffreys prior as the optimal prior using the minimum description length principle. I am also interested in quantum information theory, and I think that information theory sheds new light on the problems of the foundation of quantum mechanics. In a sense the distinction between matter and information disappear on the quantum level. Recently I have been working on the notion of sufficiency and what this concept might tell about the shape of the state space. Combining this idea with group representations should be a key to a better understanding of quantum theory. I have also worked on the relation between Bayesian networks and reversibility, and my ultimate goal is to build a solid bridge between these ideas and information theory. I am working on a new theory where methods from lattice theory are used. I think lattices of functional dependence will provide a more transparent framework to describe causation. Hopefully it will lead to better algorithms for detecting causal relationship, but the most important application might be in our description of quantum systems, where we know that our usual notion of causation break down."

[2]Authors web page: http://peter.harremoes.dk

The awarded paper is well characterized by a short quotation from one referee report:

> "The author improves previous results deriving a tighter bound on the signed log-likelihood of a negative binomial distribution by comparing it with the signed log-likelihood of a Gamma distribution. For the most important distributions like the binomial distributions, the Poisson distributions, the negative binomial distributions, the inverse Gaussian distributions and the Gamma distributions he formulates sharp inequalities that hold for any sample size what is very impressive. One of the main result according to the referee is Corollary 7.2 where he gets sharp upper and lower bounds for the binomial and the Poisson distribution."

Congratulations the authors!

Editorial Board
Prague, May 20, 2017