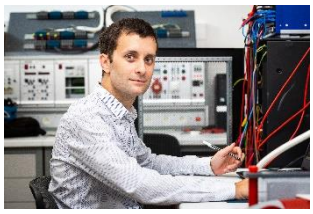
Dániel Péter DIVÉNYI

Associate professor



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19th May 1985, Budapest | married, 4 children

Professional

Budapest University of Technology and Economics (BME) 2012-

2012- assistant lecturer, 2015- senior lecturer, 2020- associate professor

2015- Team leader of Energy Market Research Group

2021- Deputy leader of Smart Power Laboratory.

My publications on Google Scholar.

MTA Computer and Automation Research Institute 2007-2008

Modeling business processes with intelligent agents.

Studies

Budapest University of Technology and Economics, 2009-2013

Doctoral School of Electrical Engineering

Topic: Modelling Distributed Generation with Intelligent Agents

Final exam: Statistics | Artificial Intelligence | Electric Power Systems

PhD degree – 2015: excellent

Budapest University of Technology and Economics, 2004-2009

Faculty of Electrical Engineering and Informatics, Electric engineer

Control Engineering major, Servo and Robot Drives minor

Final exam: Control Theory | Electric Power Systems

MSc degree – 2009: with honor

Piarist Grammar School, Budapest 1998-2004

Graduated – 2004: with honor

Language

English: intermediate (daily use) | French: intermediate (not used)

Professional activity

I participated in several R+D+I projects of various domain: energy market, distributed generation, low-voltage and traction network, electromagnetic compatibility. I applied wide palette of mathematical tools: artificial intelligence, stochastic models, mixed integer and non-linear optimization. My experiences are grouped along topics, related projects are listed below.

ENERGY MARKET:

> Elaborating co-optimized energy and ancillary service market based on EUPHEMIA algorithm, market structure development, mathematical formulation (optimization theory) and implementation, reproducing and improving clearing algorithm of power exchanges, making simulations and analyzations

The FIEK Project of Center for University-Industry Cooperation, 2017-2019, project leader
Government funded project with EU cofounding, 2013-2015, professional leader
smaller projects funded by Hungarian TSO and PX, 2010-2012

> Improving liquidity of continuous energy trading platform with special order types

(FLEXITRANSTORE H2020 project, 2017-, professional leader)

> Developing local markets in low-voltage market: market design and matching algorithm, dynamic network usage fee calculation

(INTERRFACE H2020 project, 2018-)

> Capacity allocation for regional cross-border trading, by optimizing the usage of the available transfer capacities for reserve procurement and for energy trading,

(FARCROSS H2020 project, 2019-)

> Estimation of procurement cost of distribution network loss with modeling trading activity

(Hungarian Energy and Public Utility Regulatory Authority, 2012, 2014, 2019, project leader)

> Modeling behavior of consumers in case of dynamic tariff structure (2009)

POWER SYSTEM MODELING

> Agent-based modeling of distributed generation (field of PhD research, 2009-2014)

> Developing and testing intelligent and industrial protection systems

Model, simulate and tuning power converters in PHIL environment (2018-, professional leader)
Testing protection device in HIL environment (2019-2020)
Implement control algorithm of reactive power compensators in microcontroller (2017)
Developing Bayesian algorithm for non-intrusive load monitoring (2011)

> Implement intelligent software modules to simulate distributed energy resources (2019, project leader)

> Modeling and calculation of high-frequency impedance of stranded conductors (2019-)

> Modeling and calculation low-voltage and electrical traction network (2018-)

Occasionally I am reviewing papers at following journals and conferences: IEEE Transactions on Power Systems | IEEE Transactions on Power Sustainable Energy | Applied Energy | International Conference on the European Energy Market (EEM) | IYCE conference series.

Education activity

I regularly review the topics of my lectures and include actual research results:

> Electric Energy Markets (responsible, lecturer of Hungarian and English courses)

> Electric Power Transmissions (lecturer of Hungarian and English courses)

> Power Engineering (seminars of Hungarian courses)

Instructor of laboratories:

> Power System Laboratory 1-2 (Hungarian and English)

> Smart Power Laboratory (Hungarian)

> Programming C and C++ (Hungarian)

I regularly supervise student projects and tend to involve them into my R+D activity:

> 35+ BSc and MSc thesis | 1 PhD aspirant

Active role in developing remote learning methods and automating educational administration.

Publications

The complete list of publications: Hungarian Scientific Bibliography, Google Scholar. I have published 7 journal papers and 33 conference papers, having 45 independent citations. Ten selected publications:

JOURNAL PAPERS

> Dániel Divényi, Beáta Polgári, Ádám Sleisz, Péter Sőrés, Dávid Raisz

Algorithm design for European electricity market clearing with joint allocation of energy and control reserves,
INTERNATIONAL JOURNAL OF ELECTRICAL POWER AND ENERGY SYSTEMS 111 pp. 269-285., 17 p. (2019)

> András Mohos, József Ladányi, Dániel Divényi

Methods to ascertain the resistance of stranded conductors in the frequency range of 40 Hz–150 kHz
ELECTRIC POWER SYSTEMS RESEARCH 174 Paper: 105862 (2019)

> Ádám Sleisz, Dániel Divényi, Dávid Raisz

New formulation of power plants' general complex orders on European electricity markets
ELECTRIC POWER SYSTEMS RESEARCH 169 pp. 229-240., 12 p. (2019)

> Balint Hartmann, Daniel Divenyi, Istvan Vokony

Evaluation of business possibilities of energy storage at commercial and industrial consumers – A case study
APPLIED ENERGY 222 pp. 59-66., 8 p. (2018)

> Dániel Divényi, András Dán

Agent-based Modeling of Distributed Generation in Power System Control
IEEE TRANSACTIONS ON SUSTAINABLE ENERGY 4 : 4 pp. 886-893. , 8 p. (2013)

> Dániel Divényi, János Divényi

Wind Speed Simulator Based on Wind Generation Using Autoregressive Statistical Model
ELECTROTEHNICA ELECTRONICA AUTOMATICA 60 : 2 pp. 72-78. , 7 p. (2012)

CONFERENCE PAPERS

> Daniel Divenyi, Beata Polgari, Peter Mark Sores, Istvan Vokony, Balint Hartmann

Improving the flexibility of intraday markets by introducing special products
In: IEEE, Proceedings of the 16th International Conference on the European Energy Market, Ljubljana, 2019.

> Bence Suto, Peter Mark Sores, Adam Sleisz, Daniel Divenyi

Comparative Study on Flow-Based and NTC-Based Capacity Auctions
In: IEEE, Proceedings of the 15th International Conference on the European Energy Market, Lodz, 2018.

> Anna Mogyorósi, Daniel Divényi

Improving gradient constraint of complex energy orders on power exchanges

In: IEEE, Proceedings of the 14th International Conference on the European Energy Market, Dresden, 2017.

> Dániel Divényi, Péter Márk Sőrés

Procurement of network loss—System operators as traders?

In: IEEE, Proceedings of the 14th International Conference on the European Energy Market, Dresden, 2017.

Other knowledge

Programing: C/C++ | Java | PHP | Jscript | SQL | Python | source control systems

Software packages: Microsoft Office (Word, Excel, PowerPoint, VBA) | MATLAB

Hobby

Football | Cycling | Gardening