Damien ERNST

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Personal data

Male - Belgian - Born December 24, 1975

Current positions

Full professor. Montefiore Research Unit, University of Liège, Belgium.
Chief Scientific Officer Haulogy
Invited professor, Télécom-Paris, France.

Employment history

December 2021 - : Invited professor, Télécom-Paris, France.
July 2021 – Chief Scientific Officer Haulogy.
January 2017 - June 2021: Cofounder Blacklight Analytics. Sold to Haulogy in July 2021.
October 2016 - : Full professor. Montefiore Research Unit, University of Liège, Belgium. Tenured position.
January 2015 - September 2016: Full professor. Holder of the EDF-Luminus Chair on Smart Grids. Systems and Modeling research unit, University of Liège, Belgium. Tenured position.
October 2011 - December 2014: Associate professor. Holder of the EDF-Luminus Chair on Smart Grids. Systems and Modeling research unit, University of Liège, Belgium. Tenured position.
October 2007 - September 2011: Research Associate FRS-FNRS. Systems and Modeling research unit, University of Liège, Belgium. Tenured position.
September 2006 - September 2007: Assistant Professor (with tenure), SUPELEC, Rennes Campus, France.
October 2003 - September 2006: Post-doctoral researcher of the Belgian FRS-FNRS. Research group on stochastic methods, University of Liège, Belgium.
October 1999 - September 2003: Research fellow of the Belgian FRS-FNRS, University of Liège, Belgium.
October 1998 - September 1999: Research fellow of the FRIA (French acronym for Fund for Research in the Industry and the Agriculture), University of Liège, Belgium.

Positions held as visiting researcher

Federal Institute of Technology Zürich (ETH). Period: June 2004 - September 2004. Professor: Göran Andersson. Research subjects: Distributed control of electrical power systems and electricity markets.
Massachusetts Institute of Technology (MIT). Period: March 2004 - May 2004. Professor: Marija Ilic. Research subject: Electricity markets.
Carnegie Mellon University (CMU). Period: September 2003 - December 2003. Professor: Marija Ilic. Research subject: Electricity markets.
Royal Institute of Technology in Stockholm (KTH). Period: December 1999. Professor: Göran Andersson. Research subject: Damping of electrical power oscillations.
Virginia Tech. Period: February 1999-April 1999. Professor: Arun Phadke. Research subject: Transient stability emergency control.

Education

Doctor of applied sciences, 2003 (Obtained with the greatest distinction), University of Liège, Belgium.

Electrical and Mechanical Engineer, 1998 (Obtained with the greatest distinction), University of Liège, Belgium.
High School Degree in mathematics and science, 1993, Gemmenich, Belgium.
Languages: French (native language), English (level: fluent), Dutch (level: fluent).

Main research and teaching interests

Power systems control (*smart grids* to use more trendy words)
Reinforcement learning/Artificial intelligence
Energy

Publications

I have (co-)authored around 350 research papers and two books.
My publications can be accessed from ORBI, the institutional repository of the ULiège.
They can also be accessed from Google Scholar.

Selected talks

[295] "*New developments in retailing models for integrating EV for business and consumers*". KBVE SRBE - E mobility seminar. Brussels, Belgium, October 2023.
[294] "*A research journey from remote renewable energy hubs to consumer-centric models for retailers*". CE+T Partner Forum 2023, Liège, Belgium, September 2023.
[293] "*Remote renewable energy hubs (v2)*", DTU, Copenhague, Denmark, September 2023.
[292] "*Crise énergétique : et l'après (v2) ?* ", Club Royal des Officiers du Régiment des Guides, Waterloo, Belgium, June 2023.
[291] "*Crise énergétique : et l'après (v2) ?* ", Réunion des directeurs généraux des communes de la province de Liège, Liège, Belgium, June 2023.
[290] "*Remote renewable energy hubs*", TotalEnergies, Paris, May 2023.
[289] "*Reinforcement learning for electrical markets and the energy transition",* Soirée de l'IA, CentraleSupelec, Paris, France, April 2023.
[288] "*Patrimoine et transition énergétique",* Commission royale des Monuments, Sites et Fouilles (CRMSF), Liège, Belgium, March 2023.
[287] "*Crise énergétique : et l'après ? ",* Maison de la Laïcité de Jupille-Wandre, Jupille, Belgium, February 2023.
[286] "*Crise énergétique : et l'après ? ",* Lions Club Liège Sart-Tilman, Liège, Belgium, February 2023.
[285] "*Contexte d'une crise annoncée. Quelles perspectives pour l'Europe, la Belgique et ses régions ? Quelles alternatives pour les entreprises et les citoyens ?",* Journée d'études FERMABEL, Nivelles, Belgium, January 2023.
[284] "*Nuclear: the dreaming reality",* ITP Court-Saint-Etienne, Belgium, December 2022.
[283] *"Extreme engineering for fighting climate change and the Katabata project",* Awex, Liège, Belgium October 2022.
[282] *"Extreme engineering for fighting climate change and the Katabata project",* Eoly Energy, Nivelles, Belgium October 2022.
[281] "*Reinforcement learning for electrical markets and the energy transition",* TotalEnergies, Meet the experts, Paris, France, June 2022.
[280] "*Active network management schemes to facilitate the integration of renewables and new loads into distribution networks",* SRBE Study Day: Power Network Digitalization Impacts on Protection, Automation and Control, Beersel, Belgium, June 2022.
[279] *"Extreme engineering for fighting climate change and the Katabata project",* RotaryClub, Liège, April 2022.
[278] "*Extreme engineering for fighting climate change and the Katabata project",* RotaryClub, Liège, April 2022.
[277] "*Politique énergétique, crise et consommateurs : quelques éléments importants",* Table Ronde "Spéciale Energie", Institut Gramme, May 2022.

[276] "*Extreme engineering for fighting climate change and the Katabata project*", Club B19, Liège, April 2022.

[275] "*Extreme engineering for fighting climate change and the Katabata project*", Société littéraire de Liège. Liège, April 2022.

[274] "*Nuclear: the dreaming reality*", Centre Culture de Beaufays, Belgium, February 2022.

[273] "*Reinforcement learning for electrical markets and the energy transition*", Hi-Paris, Paris, France, January 2022.

[272] "*Reinforcement learning for electrical markets and the energy transition*", Institut Polytechnique Paris, Paris, France, November 2021.

[271] "*Reinforcement learning for electrical markets and the energy transition*", AI Conférence, Institut Pointcarré, Paris, France, November 2021.

[270] "*Competition models for the electrical industry and electrical markets*", The Haulogy Academy, October 2021.

[269] "*Nuclear: the dreaming reality*", NSI, Liège, Belgium, September 2021.

[268] "*Communauté d'Energie Renouvelable (CER) : un bref regard sur l'état d'avancement la législation*", Atelier sur les micro-réseaux et les communautés d'énergie renouvelable de la Province de Liège. March 2021.

[267] "*Extreme engineering for fighting climate change and the Katabata project*", Café pol': écologie et mondialisation du Mouvement Libéral Étudiant. March 2021.

[266] "*Harvesting wind energy in Greenland: a huge step towards the building a global electrical grid*". Stanford Decarbonizing the Grid Workshop: The role of grid interconnection. March 2021.

[265] "*Eléments pour une vision techno-optimiste de l'écologie*". HEC Liège Advisory, Quatre regards neufs sur l'écologie, March 2021.

[264] "*AI for energy: a bright and uncertain future ahead*", AI4ENERGY – kickoff meeting. November 2020.

[263] "*Extreme engineering for fighting climate change and the Katabata project*", Maison de la Presse, Liège, Belgium, October 2020. Conference given with Michael Fonder and Xavier Fettweis.

[262] "*Extreme engineering for fighting climate change*", Assemblée générale de la Conférence Nationale des Cadres, Conference given through Teams, October 2020.

[261] "*Energy: the clash of nations*", UDA, Louvain-La-Neuve, Belgium, March 2020.

[260] "*Extreme engineering for ecology*", Abbaye de Stavelot, Belgium, March 2020.

[259] "*Extreme engineering for ecology*", Centre Culturel de Welkenraedt, Belgium, March 2020.

[258] "*Global Grid and Power to X for fighting climate change*", Commission de l'Energie, de l'Environnement et du Climat de la Chambre des représentants, Brussels Belgium, March 2020.

[257] "*Nuclear: the dreaming reality*", Belgian Nuclear Society, Brussels, Belgium, February 2020.

[256] "*Extreme engineering for ecology*", Lions Club Wanze, Belgium, February 2020.

[255] "*Nuclear: the dreaming reality*", Espace universitaire de Liège, Liège, Belgium, February 2020.

[254] "*Global Grid and Power to X for fighting climate change*", Engie, Brussels, Belgium, February 2020.

[253] "*Energy: the clash of nations*", Commune de Montzen, Montzen, Belgium, January 2020.

[252] "*International multi-sector coupling for the energy transition in Belgium*", Febeliec Energy Forum, Brussels, Belgium, January 2020.

[251] "*Extreme engineering for ecology*", Semaine des sciences amusantes, IPES de Wavre, Wavre, Belgium, January 2020.

[250] "*Big infrastructures for fighting climate change*", IPFA/European Investment Bank, Brussels, Belgium, January 2020.

[249] "*Uber-like Models for the Electrical Industry*", Rotary Namur Citadelle, Namur, Belgium, Janvier 2020.

[248] "*Energy: the clash of nations*", Commune de Dalhem, Dalhem, Janvier 2020.

[247] "*Energy: the clash of nations*", Forum des Savoirs, Liège, December 2019.

[246] "*Energy: the clash of nations*", Fédération wallonne de l'agriculture, Gembloux, Belgium, December 2019.

[245] "*Uber-like Models for the Electrical Industry*", Friends Of Sustainable Grids (FOSG), Brussels, Belgium, November 2019.

[244] "*Uber-like Models for the Electrical Industry*", Febeliec, Brussels, Belgium, November 2019.

[243] "*Eléments pour une vision techno-enthousiasme de l'écologie*", Jeunes MR de la Région des Sources (Spa, Theux, Jalhay), Verviers, November 2019.

[242] "*Uber-like Models for the Electrical Industry*", ING Event: Are you ready for the energy transition?, Brussels, Belgium, November 2019.

[241] "*Uber-like Models for the Electrical Industry*", Formation GAZELCO, La Roche-en-Ardenne, November 2019.

[240] "*The GREDOR project. Redesigning the decision chain for managing distribution networks*", Loria, Nancy, France, November 2019.

[239] "Nuclear: the dreaming reality", Collège Belgique, Brussels, Belgium, November 2019.

[238] "Eléments pour une vision techno-enthousiasme de l'écologie", Ecolo J, Brussels, October 2019.

[237] "*Uber-like Models for the Electrical Industry*", Liège Créative, Liège, Belgium, October 2019.

[236] "*Energy: the clash of nations*", Intervention dans le cours de politique énergétique européenne de l'ULiège, Liège, Belgium, October 2019.

[235] "*Eléments pour une vision techno-enthousiasme de l'écologie*", Conférence transitions énergétiques et développement durable. Quelles voies pour nos sociétés ?, ULB, Brussels, October 2019.

[234] "*Eléments pour une vision techno-enthousiasme de l'écologie*", Afterworks de l'AILg et de la FABI sur la transition énergétique, Liège, September 2019.

[233] "*Energy: the clash of nations*", Leçon inaugurale pour la Haute Ecole de la Province de Namur, Namur, Belgium, September 2019.

[232] "*Eléments pour une vision techno-enthousiasme de l'écologie*", Journée d'étude des parlementaires fédéraux du MR, Brussels, September 2019.

[231] "*Energy: the clash of nations*", Association Chrétienne des Institutions Sociales et de santé, Namur, Belgium, June 2019.

[230] "*Round Table No 3. Industrial Solutions for Active Network Management*", CIRED 2019, Madrid, Spain, June 2019.

[229] "*Reinforcement Learning in Power Systems*", Tutorial on Artificial Intelligence in electricity distribution systems, CIRED 2019, Madrid, Spain, June 2019.

[228] "*Uber-like Models for the Electrical Industry*", Bank Petercam-Degroof, Luxembourg, May 2019.

[227] "*The rise of Artificial Intelligence (AI)*", CESE Wallonie, Liège, Belgium, May 2019.

[226] "*Eléments pour une vision techno-enthousiasme de l'écologie*", Les enjeux climatiques & énergétiques - Conférence/Débat, Liège, May 2019

[225] "*Energy: the clash of nations*", Students for Climate, Liège, Belgium, April 2019.

[224] "*Harvesting Wind Energy in Greenland: a project for Europe and a huge step towards the building a global electrical grid*", Friends of Sustainable Grids, Brussels, Belgium, March 2019.

[223] "*Energy: the clash of nations*", Conseil Provincial de Liège, Ostende, Belgium, March 2019.

[222] "*Uber-like Models for the Electrical Industry*", EDF-Luminus Business Event, Hippodrome de Wallonie, Mons, Belgium March 2019.

[221] "*The Global Grid", Fondation Arenberg, Sénat de Belgique, March 2019.*

[220] "*Harnessing the Potential of Power-to-Gas Technologies. Insights from a preliminary analysis focused on Belgium*", Fluxys Forum, Bruxelles, March 2019.

[219] "*Uber-like Models for the Electrical Industry*", Journée d'études de RESA, Liège, Januray 2019.

[218] "*Energy: the clash of nations*", Institute Saint-Laurent, Liège, Belgique, January 2019.

[217] "*Artificial Intelligence and business disruption*", Asssociation des entrepreneurs de Jalhay, Jalhay, Belgique, January 2019.

[216] "*Reinforcement learning, energy systems and deep neural nets*", PGMO Days, Paris, France, November 2018.

[215] "*Reinforcement learning, energy systems and deep neural nets*", Energy-Open 2018, Eindhoven, The Netherlands, November 2018.

[214] "*Energy: the clash of nations*", Maison de l'environnement, Néchin, Belgique, June 2018.

[213] "*Energy: the clash of nations*", Leçon inaugurale pour la rentrée académique de la Haute Ecole Robert Schuman, Arlon, Belgium, June 2018.

[212] "*Uber-like Models for the Electrical Industry*", Namur Institute for Complex Systems, Namur, Belgium, September 2018.

[211] "*Reinforcement leaning for data-driven optimisation*", EES-UETP Course on Advanced Data Analytics for Energy Systems. Porto, Portugal, September 2018.

[210] "*Energy: the clash of nations*", Groupe politique MR, Bertogne, Belgium, August 2018.

[209] "*Energy: the clash of nations*", Formation en gestion énergétique 2018, La production d'électricité en entreprises, Virton, Belgium, June 2018.

[208] "*Electricity retailing in Europe: remarkable events (with a special focus on Belgium)*", Business event sur l'ECONOMIE CIRCULAIRE, Comment créer de la valeur, réduire ses coûts et trouver des financements, ULiège, Interface entreprises, Belgium, June 2018

[207] "*Uber-like Models for the Electrical Industry*", Maison Rurale de Nassogne, Nassogne, Belgique, May 2018.

[206] "*The GREDOR project. Redesigning the decision chain for managing distribution networks*",Young Researchers Symposium, ULB, Brussels, May 2018.

[205] "*Energy: the clash of nations*", Maison des Associations, Wellin, Belgium, May 2018.

[204] "*Reinforcement learning: a generic tool for solving sequential decision-making problems for electrical systems*", Journée d'étude de la SRBE sur *"*L'intelligence artificielle au sein du système électrique: Ses applications, potentialités et dangers", Brussels, Belgium, May 2018.

[203] "*Energy: the clash of nations*", GreenMind University, Brussels, Belgium, May 2018.

[202] "*Energy: the clash of nations*", Conférence Energie-Climat, Université de Liège, Belgium, May 2018.

[201] "Projet de décret « GRD »: quelques remarques du Prof. Damien ERNST", Parlement wallon, Commission énergie, Belgium, April 2018.

[200] "*Energy: the clash of nations*", Groupe politique "Pour Waremme", Waremme, Belgium, April 2018.

[199] "*The Green Grid Network and Trading Renewable Energy*", Academics for development, Louvain-La-Neuve, Belgium, April 2018.

[198] "*Uber-like Models for the Electrical Industry*", Meuse Condroz ASBL, Tihange, Belgium, March 2018.

Degroof Petercam Business Day, Bayard Castel, Éghezée, Belgium, March 2018.

[197] "*Autonomous vehicles and new business models for the distribution of electricity*", Soirée sur L'avenir de Volvo, la mobilité de demain, technologie..., Liège, Belgium, March 2018.

[196] "*Uber-like Models for the Electrical Industry*", Degroof Petercam Business Day, Bayard Castel, Éghezée, Belgium, March 2018.

[195] "The rise of Artificial Intelligence (AI)", Collège Saint-Joseph de Welkenraedt, Belgium, March 2018.

[194] "L'Intelligence artificielle, risque ou chance pour l'Homme", Cathédrale Saint Paul de Liège, Liège, Belgium, March 2018.

[193] "*Energy: the clash of nations*", Lions Club, Liège, Belgium, March 2018.

[192] "*Energy: the clash of nations*", Université du Temps Libre d'Arlon, Arlon, Belgium, January 2018.

[191] "*Artificial Intelligence and business disruption*", CMI Iternational Technology Meeting, Liège, Belgium, January 2018.

[190] "*Energy: the clash of nations*", Rotary Namur Citadelle, Namur, Belgium, January 2018.

[189] "*Uber-like Models for the Electrical Industry*", Conférence avec la ministre de l'énergie MC Marghem, Brussels, Belgium, November 2017.

[188] "*The GREDOR project. Redesigning the decision chain for managing distribution networks*", Séminaire Smart Grids, Technifutur, Liège, Belgium, November 2017.

[187] "*Energy: the clash of nations*", Université du 3ème âge, Jupille, November 2017.

[186] "*Energy: the clash of nations*", Rotary LNE, Liège, Belgium, November 2017.

[185] "*Uber-like Models for the Electrical Industry*", Conférence "L'Energie : Une question de transitions ?" Brussels, Belgium, November 2017.

[184] "*Uber-like Models for the Electrical Industry*", AGC Glass Europe, Charleroi, Belgium, November 2017.

[183] "*Aire autoroutière de Hondelange: combiner le développement durable et l'opportunité économique*", Journée d'étude de la Sofico, Jodoigne, Belgium, November 2017.

[182] "*Uber-like Models for the Electrical Industry*", Belgian Solar Network, Brussels, Belgium, November 2017.

[181] "*The rise of Artificial Intelligence (AI)*", Conférence ASBL La Mézon, Huy, Belgium, November 2017.

[180] "*Uber-like Models for the Electrical Industry*", Conférence de sensibilisation au PV en Hesbaye-Condroz, Hannut, Belgium, November 2017.

[179] "*Time to make a choice between a fully liberal or fully regulated model for the electrical industry*", SRBE-KBVE: Soirée de conférence: Regards croisés sur la transition énergétique, Louvain-la-Neuve, Belgium, November 2017.

[178] "*Electrification and DRC*", Colloque "Enjeux électriques en République Démocratique du Congo   Liège, Belgium, November 2017.

[177] "*Energy: the clash of nations*", Maison de la Laïcité, Wandre, Belgium, October 2017.

[176] "*Uber-like Models for the Electrical Industry*", Colloque "Conflits à l'ère du numérique", Brussels, Belgium, October 2017.

[175] "*Uber-like Models for the Electrical Industry*", L'énergie et les data, Café Numérique Liège, Liège, Belgium, October 2017.

[174] "*Uber-like Models for the Electrical Industry*", Cluster Tweed, Louvain-La-Neuve, Belgium, October 2017.

[173] "*The rise of Artificial Intelligence (AI)*", ARHS, Luxembroug, October 2017.

[172] "*Energy: the clash of nations*", Alliance française de Belgique, Bruxelles, September 2017.

[171] "*The GREDOR project. Redesigning the decision chain for managing distribution networks*", Facebook AI Research, Paris, France, September 2017.

[170] "*The GREDOR project. Redesigning the decision chain for managing distribution networks*", Data Science Summer School, Ecole Polytechnique, Paris, France, September 2015.

[169] "*Uber-like Models for the Electrical Industry*", Lampiris Coop, Liège, Belgium June 2017.

[168] "*Uber-like Models for the Electrical Industry*", Event - Mobilité Electrique, Campus Francorchamps ASBL, Belgium, June 2017.

[167] "*Energy: the clash of nations*", Soirée de collecte de fonds du Rotary Club Liège-Chaudfontaine, Liège, Belgium, May 2017.

[166] "*Uber-like Models for the Electrical Industry*", Gembloux Agro-Bio Tech, Gembloux, Belgium, April 2017.

[165] "*Uber-like Models for the Electrical Industry*", Conférence & Walking Diner // Mobilité et Révolution Energétique, UStart Liège, Liège, Belgium, April 2017.

[164] "*The rise of Artificial Intelligence (AI)*", Conférence groupement de médecins, Eupen, Belgium, April 2017.

[163] "*Uber-like Models for the Electrical Industry*", University of Mons, Mons, March 2017.
[162] "*Energy: the clash of nations*", College Belgique, Namur, March 2017
[161] "*Uber-like Models for the Electrical Industry*", Smart City Institute, University of Liège, Liège, March 2017.
[160] "*Uber-like Models for the Electrical Industry*", Réinventons Liège, Liège, March 2017.
[159] "*COP22 and Electrical Systems*", Printemps des sciences, University of Liège, Liège, Belgium, March 2017.
[158] "*COP22 and Electrical Systems*", Rotary de Liège-Chaudfontaine, Belgium, February 2017.
[157] "*The GREDOR project. Redesigning the decision chain for managing distribution networks*", Future Electric Power Systems and the Energy Transition, Champéry, Switzerland, February 2017.
[156] "*Uber-like Models for the Electrical Industry*", Coworking Namur, Belgium, February 2017.
[155] "*Energy: a worrisome future ahead*", Royal International Club - Château Sainte-Anne, Brussels, Belgium, January 2017.
[154] "*Uber-like Models for the Electrical Industry*", Powerdale Event, Brussels, Belgium, January 2017.
[153] "*COP22 and Electrical Systems*", Au Pays de l'Attert ASBL, Attert, Belgium, December 2016.
[152] "*COP22 and Electrical Systems*", Société des transports intercommunaux de Bruxelles (STIB), Brussels, Belgium, December 2016.
[151] "*COP22 and Electrical Systems*", Formation Gazelco (FGTB énergie), Castel les Sorbiers, Heer-sur-Meuse, Belgium, December 2016.
[150] "*The rise of Artificial Intelligence (AI)*", Cycle de Grandes conférences ULg à Verviers, Verviers, Belgium, December 2016.
[149] "*COP22 and Electrical Systems*", Congrès du parti Défi sur l'Environnement, l'Energie et la Ruralité, Charleroi, Belgium, December 2016.
[148] "*COP22 and Electrical Systems*", Rotary de Visé, Visé, Belgium, November 2016.
[147] "*The GREDOR project. Redesigning the decision chain for managing distribution networks*", Workshop EU Incite Project, Energyville, Genk, Belgium, November 2016.
[146] "*COP22 and Electrical Systems*", Association des professeurs émérties et honoraires de l'ULG (APEH), Château Colonster, Belgium, November 2016.
[145] "*The GREDOR project. Redesigning the decision chain for managing distribution networks*", Workshop on "Smart grids energy and big data analytics challenges, opportunities, and solutions: from distribution systems to pan-European system." Luxembourg Institute of Science and Technology (LIST), Luxembourg, November 2016.
[144] "*The Green Grid Network and Trading Renewable Energy*", Climate Parliament, Green Grid Network Parliamentary Roundtable (side event of the COP22), Marrakech, Morocco, November 2016.
[143] "*The GREDOR project. Redesigning the decision chain for managing distribution networks*", ADVANTAGE Research meeting, Royal Society, London, UK, October 2016.
[142] "*The GREDOR project. Redesigning the decision chain for managing distribution networks*", Sommet wallon pour le climat, Mons, Belgium, October 2016.
[141] "*Analyse du projet de décret relatif à la méthodologie tarifaire applicable aux gestionnaires de réseaux de distribution de gaz et d'électricité*", Commission des pouvoirs locaux, du logement et de l'énergie, Parlement wallon, Namur, Belgium, September 2016.
[140] "*Energy, Grids and Microgrids*", Emissions Zéro, Namur, Belgique, October 2016.
[139] "*The Global Grid* ", Fête de la Science, RTE, Paris, France, October 2016.
[138] "*Batteries and disrupting business models for the energy sector* ", Journée d'étude "Stockage de l'électricité : réel bouleversement ?", Liège, Belgium, October 2016.
[137] "*La transition énergétique, l'affaire de tous*", Liège Créative, Liège, Belgium, October 2016.
[136] "*Energy, Grids and Microgrids*", Commission des pouvoirs locaux, du logement et de l'énergie, Parlement wallon, Namur, Belgium, September 2016.

[135] "*Energy, Grids and Microgrids*", Desco Expo, Kemzeke, Belgium, September 2016.
[134] "*Energy, Grids and Microgrids*", Université du Temps Libre, Andenne, Belgium, September 2016.
[133] "*The GREDOR project. Redesigning the decision chain for managing distribution networks*", International Workshop on Smart Micro-Grids for Autonomous Zero-Net-Energy Communities, Birmingham, UK, September 2016.
[132] "*Energy, Grids and Microgrids*", Suez group, Bruges, Belgium, September 2016.
[131] "*Energy, Grids and Microgrids*", 6èmes Assises des Energies renouvelables "Photovoltaïque", Moulin de Beez, Namur, Belgium, June 2016.
[130] "*Capacity mechanisms for improving security of supply: quick patches or thoughtfully rethinking the way electricity is traded?*" Conference on Capacity Remuneration Mechanisms, Brussels, Belgium, June 2016.
[129] "*Integration of renewable energy sources and demand-side management into distribution networks",* EES-UETP course on "Risk Management in Power Systems: from Theory to Practice", Porto, Portgual, June 2016.
[128] "*Energy, Grids and Microgrids*", Vlaamse Raad, Brussels, Belgium, June 2016.
[127] "*Energy, Grids and Microgrids*", Union Wallonne des Entreprises de Liège, Liège, Belgium, June 2016.
[126] "*The rise of AI*", Maison de la Laïcité, Amay, Belgium, June 2016
[125] "*Energy, Grids and Microgrids*", Midi Energie à Bruxelles Environnement, Brussels, Belgium, May 2016.
[124] "*Energy, Grids and Microgrids*", 3E, Brussels, Belgium, May 2016.
[123] "*Smart grids versus Microgrids*", Intermixt, Brussels, Belgium, May 2016.
[122] "*Smart grids versus Microgrids*", Région wallonne, Moulin de Beez, Namur, Belgium, May 2016.
[121] "*The rise of AI*", Royal International Club - Château Sainte-Anne, Brussels, Belgium, May 2016.
[120] "*The inevitable downfall of the Belgian electrical power industry?*", Internacia skoltismo en Esperanto – International Scouting in EsperantoWépion, Belgium, May 2016.
[119] "*COP21 and Electrical Systems*", Lycée Saint-Jacques, Liège, Belgium, April 2016.
[118] "*COP21 and Electrical Systems*", Conférence - Accord de Paris sur le climat: quels défis pour la Belgique?, Brussels, Belgium, April 2016.
[117] "*COP21 and Electrical Systems*", Régionale Ecolo du Brabant wallon, Mont-Saint-Guibert, Belgium, April 2016.
[116] "*The GREDOR project. Redesigning the decision chain for managing distribution networks*", INRIA-Lille, France, March 2016.
[115] "*TPCV versus gouvernement(s) et gestionnaires de réseaux: décodage*", Assemblée Générale Touche Pas à mes Certificats Verts, Marche-en-Famenne, Belgique, March 2016.
[114] "*The Global Grid for empowering renewable energy*", Energy Next! Congres, Dordrecht, The Netherlands, December 2015.
[113] "*The Global Grid for empowering renewable energy*", Climate Parliament Roundtable on Green Growth, Paris, France, December 2015.
[112] "The GREDOR project. Redesigning the decision chain for managing distribution networks", Storage workshop, Lille, France, November 2015.
[111] "*Global Grid(s) versus Microgrids*", ELIA Stakeholders' Days, Brussels, Belgium, November 2015.
[110] "L'énergie de demain", Lions Club Athus Lorraine, Pétange, Luxembourg, November 2015.
[109] "*The inevitable downfall of the Belgian electrical power industry?*" Innovation in Energy Management. Make Green Efficient!, Louvain-La-Neuve, Belgium, November 2015.
[108] "*Un réseau électrique mondial pour accélérer le développement des énergies renouvelables*", ETOPIA, Mons, Belgium, November 2015.
[107] "*Microgrids and their destructuring effects on the electrical industry*", Fall Days on Algorithms and Models for Real-Life Systems, Herten-Roermond, The Netherlands, November 2015.

[106] "*Smart meter: cette brique de base de notre (futur) système énergétique*", Parlement wallon – commission énergie, Namur, Belgium, November 2015.

[105] "*Microgrids and their destructuring effects on the electrical industry*", Journée d'etude AIM sur les micro-réseaux, Château Colonster, Liège, November 2015.

[104] "*The inevitable downfall of the Belgian electrical power industry?*" Journées parlementaires du CDH, Chateau d'Harzé, Belgium, September 2015.

[103] "*The inevitable downfall of the Belgian electrical power industry?*" Congrès de Professeurs de Sciences, Liège, Belgium, August 2015.

[102] "*An economic case for transnational and international transmission*", International Energy & Climate Forum, Lucerne, Switzerland, June 2015.

[101] "*Microgrids and renewable energy: the only hope of the Belgian electrical industry?*", Actualités 2015 du solaire photovoltaïque, du stockage énergétique et des réseaux intelligents, Namur, Belgium, June 2015.

[100] "*The Global Grid for Empowering Renewable Energy*", TEDx-Moonshot Edition, Liège, Belgium, May 2015.

[99] "*The inevitable downfall of the Belgian electrical power industry?*" SRBE-KBVE, Brussels, May 2015.

[98] "*The inevitable downfall of the Belgian electrical power industry?*" CSC Bâtiment - Industrie & Energie, Brussels, Belgium, April 2015.

[97] "*The inevitable downfall of the Belgian electrical power industry?*" Haute Ecole de la Province de Liège, Liège, Belgium, March 2015.

[96] "*Blackouts: des vérités qui dérangent*", Printemps des sciences, Haute Ecole Robert Schuman, Arlon, Belgium, March 2015.

[95] "*Plan de délestage: aller au-delà de l'iniquité et de l'insécurité*", Workshop Living Lab on Risk Management, ULG, Liège, Belgium, March 2015

[94] "*Blackouts: des vérités qui dérangent*", SUR'Cité asbl, Liège, Belgium, February 2015.

[93] "*Microgrids and their destructuring effects on the electrical industry*", INRIA Lille Nord Europe, France, January 2015.

[92] "*Blackouts: des vérités qui dérangent*", Brussels Business Club, Belgium, January 2015.

[91] "*The Global Grid*", Cercle Val Duchesse, Brussels, Belgium, January 2015.

[90] "*Microgrids and their destructuring effects on the electrical industry*", Center for Data Science, University of Paris-Saclay, Paris, France, January 2015.

[89] "*Microgrids and their destructuring effects on the electrical industry*", HEC-ULG, Liège, Belgium, January 2015.

[88] "Constitution et fonctionnement des réseaux", Carrefour énergie, Namur, Belgium, December 2014.

[87] "*Blackouts: des vérités qui dérangent*", MCC, Jodoigne, Belgium, December 2014.

[86] "*Blackouts: des vérités qui dérangent*", Commune de Sprimont, Sprimont, Belgium, November 2014.

[85] "*Blackouts: des vérités qui dérangent*", Les Tribunes de l'ULB, Brussels, Belgium, November 2014.

[84] "*Blackouts: des vérités qui dérangent*", Université de Liège, Liège, Belgium, November 2014.

[83] "*Blackouts: des vérités qui dérangent*", Club Rotary Liège Nord Est, Liège, Belgium, October 2014.

[82] "*Batch mode reinforcement learning based on the synthesis of artificial trajectories*", MGill, Montreal, Canada, October 2014.

[81] "*Batch mode reinforcement learning based on the synthesis of artificial trajectories*", MGill, Montreal, Canada, October 2014.

[80] "*Microgrids and their destructuring effects on the electrical industry*", Ecole Polytechnique de Montréal (EPM), Montreal, Canada, October 2014.

[79] "*Understanding active network management in 30 minutes*", Ecole Polytechnique de Montreal (EPM), Montréal, Canada, October 2014.

[78] "*Understanding active network management in 30 minutes*", Entretiens Jacques Cartier, Montreal, October 2014.

[77] "*The Global Grid*", Next-GWiN, Rennes, France, October 2014.

[76] "*The Global Grid*", Rotary Club Liège, Liège, Belgium, September 2014.

[75] "*Microgrids and their destructuring effects on the electrical industry*", Scientitizenship and Energy, Archéoforum, Liège, Belgium, July 2014.

[74] "The Global Grid", Scientitizenship and Energy, Institut de Zoologie de l'Université de Liège, Liège, Belgium, July 2014.

[73] "*Solving the fluctuation problems in a land with 100% of renewable energy*", Scientitizenship and Energy, Cité Miroir, Liège, Belgium, July 2014.

[72] "*Microgrids and their destructuring effects on the electrical industry*", ELIA, Brussels, Belgium, June 2014.

[71] "*Microgrids and their destructuring effects on the electrical industry*", Café Numérique Liège, Belgium, May 2014.

[70] "*The Global Grid*", CESAME, UCL, Louvain La Neuve, Belgium, May 2014.

[69] "*Understanding active network management in 20 minutes*", DYSCO Study Day, UNamur, Namur, Belgique, May 2014.

[68] "*The Global Grid*", Liège Creative, Chateau Colonster, Liège, Belgique, May 2014.

[67] "*Microgrids and their destructuring effects on the electrical industry*", Electrabel, Brussels, Belgium, May 2014.

[66] "*Batch mode reinforcement learning based on the synthesis of artificial trajectories*", Xerox Research Center Europe, Grenoble, France, April 2014.

[65] "*GREDOR*", Workshop ULg – EDF R&D on Active Management Tools for Distribution System Operators, Montefiore Institute – ULG, March 2014

[64] "*The Global Grid*", Rotary Club Liège – rive droite, January 2014.

[63] "*GREDOR*", ABB Corporate Research Center – Switzerland, December 2013.

[62] "*Multi-terminal HVDC systems and ancillary services*", ABB Corporate Research Center – Switzerland, December 2013.

[61] "*Understanding active network management in 40 minutes*", ETH, Zürich, Switzerland, December 2013.

[60] "*The Global Grid*", Conseil Economique et Social de Wallonie, Liège, Belgium, December 2013.

[59] "*Multi-terminal HVDC systems and ancillary services*", Study day: Towards a HVDC European supergrid. A German-Belgian link with the ALEGrO project. Liège, Belgium, October 2013.

[58] "*GREDOR*", ATRIAS, Leuven, Belgium, September 2013.

[57] "Smart *conversion of residual heat into electricity: the electricity market point of view*", Restwarmterecuperatie - its voor uw bedrijf? ArcelorMittal-Gent, September 2013.

[56] "*Meta-learning of exploration-exploitation strategies in reinforcement learning*", University of Waterloo, Ontario, Canada, August 2013.

[55] "*Understanding active network management in 40 minutes*", University of Waterloo, Ontario, Canada, August 2013.

[54] "*Understanding active network management in 40 minutes*". DAI-Labor,TU Berlin, Berlin,Germany, July 2013.

[53] "*Meta-learning of exploration-exploitation strategies in reinforcement learning*", CWI (Centrum voor Wiskunde en Informatica), Amsterdam, The Netherlands, July 2013.

[52] "*Understanding active network management in 40 minutes*", CWI (Centrum voor Wiskunde en Informatica), Amsterdam, The Netherlands, July 2013.

[51] "*Understanding active network management in 40 minutes*", CWAPE (Commission WAllone pour l'Electricité). June 2013.

[50] "*Understanding active network management in 40 minutes*", Systmod Research Unit, ULg, Belgium, May 2013.

[49] "*Understanding active network management in 30 minutes*", 9ème Rendez-Vous Annuel Du Solaire Photovoltaique, Namur, Belgium, April 2013.

[48] "*Meta-learning of exploration-exploitation strategies in reinforcement learning*", Gatsby Computational Neuroscience Unit, University College London, UK, April 2013.

[47] "*Smart operation of multi-terminal HVDC systems for providing ancillary services*", University of Luxembourg, Luxembourg, March 2013.

[46] "*Solving the fluctuation problems in a land with 100% of renewable energy*". Université Catholique de Louvain (UCL), Belgium, February 2013.

[45] "*Batch mode reinforcement learning based on the synthesis of artificial trajectories*", Princeton, USA, December 2012.

[44] "*Meta-learning of exploration-exploitation strategies in reinforcement learning*", Artificial Intelligence Group, Maastricht University, The Netherlands, September 2012.

[43] "*Multi-terminal HVDC and ancillary services*",   Energy management forum, Tainan, Taiwan, May 2012

[42] "*Learning for exploration-exploitation in reinforcement learning*", Workshop on Time for Causality, Bristol, UK, April 2012.

[41] "*Learning for exploration-exploitation in reinforcement learning*", VITO, Belgium, April 2012.

[40] "*Machine Learning to the Rescue of Posturology: Towards Assisted Training*", IMEP, Namur, Belgique, January 2012.

[39] "*Learning for exploration-exploitation in RL. The dusk of the small formulas' reign*,*"* SequeL, INRIA Lille-Nord Europe research center, November 2011.

[38] "*Beyond function approximators for batch mode reinforcement learning: rebuilding trajectories*", TAO Team, Laboratoire de Recherche en Informatique, Université de Paris Sud, France, December 2010.

[37] "*Beyond function approximators for batch mode reinforcement learning: rebuilding trajectories*", Workshop "Learning and Planning from Batch Time Series Data", NIPS 2010, Whistler, Canada.

[36] "*Model-free Monte Carlo-like policy evaluation*". Journées MAS 2010, August 31-September 3, 2010, Bordeaux, France.

[35] "*Consequence driven decomposition of large-scale power systems security analysis*". 2010 IREP Symposium - Bulk Power Systems Dynamics and Control - VIII, Buzios, Rio de Janeiro, Brazil, 1-6 August 2010.

[34] "*Learning about near-optimal policies from a sample of trajectories*", University of Rouen, France, March 2010.

[33] "*Learning about near-optimal policies from a sample of trajectories*", CESAME, UCL, Louvain La Neuve, Belgium, December 2009.

[32] "*What is the likely future of real-time transient stability?*", 2009 IEEE/PES Power Systems Conference and Exposition, March 15-18, 2009, Seattle, USA.

[31] "*Lower bounds in reinforcement learning: the intelligent agent dream is getting closer*", Control Group, TU Delft, The Netherlands, January 2009.

[30] "*Scalable process control*", Meeting TOTAL APC, Siège de Total à La Défense (Paris), France, June 2008 (talk given with Rodolphe Sepulchre).

[29] "*A reinforcement learning approach for designing artificial autonomous intelligent agents*", EPIT'08, Porquerolles, France, May 2008.

[28] "*Fitted Q iteration*", 3rd Bellairs Reinforcement learning workshop, Holetown (Barbados), April 2008.

[27] "*Clinical data based optimal STI strategies for HIV: a reinforcement learning approach*", INRIA Futurs Lille, France, July 2007.

[26] "*Clinical data based optimal STI strategies for HIV: a reinforcement learning approach*", SAMSI Workshop on Dynamic Treatment Regime, Durham, North Carolina, USA, June 2007.

[25] "*Computing near-optimal policies from trajectories by solving a sequence of standard supervised learning problems*", IRCCyN, Nantes, France, June 2006.

[24] "*Clinical data based optimal STI strategies for HIV: a reinforcement learning approach*", 45th IEEE Conference on Decision and Control, San Diego, USA, December 2006.

[23] "*Computing near-optimal policies from trajectories by solving a sequence of standard supervised learning problems*", Control Group, TU Delft, The Netherlands, November 2006.

[22] "*Computing near-optimal policies from trajectories by solving a sequence of standard supervised learning problems*", Neuroinformatics Group, Universität Osnabrück, Germany, August 2006.

[21] "*Computing near-optimal policies from trajectories by solving a sequence of standard supervised learning problems*", Benelux Meeting, Heeze, The Netherlands, March 2006.

[20] "*Clinical data based optimal STI strategies for HIV: a reinforcement learning approach*", Montefiore, University of Liège, Belgium, March 2006.

[19] "*Supervised learning based sequential decision making*", Manchester, United Kingdom, January 2006.

[18] "*Selecting concise sets of samples for a reinforcement learning agent*", CIRAS, Singapore, December 2005.

[17] "*Supervised learning based sequential decision making*", Optimization frameworks for industrial applications, Paris, France, October 2005

[16] "*Analysis and control of system dynamics driven by objective oriented agents. Application to power systems*", EDF, research center, Clamart, France, October 2005.

[15] "*Supervised learning based sequential decision making*", FNRS Machine Learning Day, UCL, Louvain-La-Neuve, Belgium, August 2005.

[14] "*Reinforcement learning in high-dimensional and/or continuous state spaces*", Dalle Molle Institute for Artificial Intelligence (IDSIA), Lugano Switzerland, September 2004.

[13] "*Market dynamics driven by the decision-making of power producers*", Bulk Power System Dynamics and Control - IV Managing Complexity in Power Systems: From Micro-Grids to Mega-Interconnections, Cortina D'Ampezzo, Italy, August 2004.

[12] "*Design of intelligent agents for power system control*", ABB research center, Baden, Switzerland, July 2004.

[11] "*Supervised learning based reinforcement learning. Application to power systems control*", ETH, Zürich Switzerland, January 2004.

[10] "*Supervised learning based reinforcement learning*", University of Massachussetts, Amherst, USA, December 2003.

[9] "*Iteratively extending time horizon reinforcement learning*", Carnegie Mellon University, Pittsburgh, USA, September 2003.

[8] "*Reinforcement learning in continuous state spaces*", CESAME, UCL, Louvain La Neuve, Belgium, October 2002.

[7] "*FACTS devices controlled by means of reinforcement learning algorithms*", 14th Power Systems Computation Conference (PSCC 2002), Sevilla, Spain, June 2002.

[6] "*Reinforcement learning in continuous state spaces*", Benelux Meeting, Veldhoven, The Netherlands, March 2002.

[5] "*Reinforcement learning applied to power system oscillations damping*", 40th IEEE Conference on Decision and Control, Orlando, USA, December 2001.

[4] "*Preventive and emergency transient stability control*", VII Symposium of Specialists in Electric Operational and Expansion Planning (SEPOPE 2000), Curitiba, Brasil, May 2000.

[3] "*Closed loop transient stability emergency control*", IEEE PES Winter Meeting, Singapore, January 2000.

[2] "*The SIME method as a tool for transient stability analysis and control*", KTH, Stockholm, Sweden, December 1999.

[1] "*Transient stability emergency control*", Virginia Polytechnic Institute, Virginia, USA, March 1999.

Awards

Note: the personal grants I have obtained for doing research are not listed as Scientific Awards, as it is often the case.

[14] Honorary Citizen of Liège in 2019.

[13] Elected Belgian Personality of the Year 2018 by the Newspaper La Libre.

[12] Recipient of the "**André Blondel Medal**" 2018

[11] Research paper: "*Intra-day bidding strategies for storage devices using deep reinforcement learning*" authored by Ioannis Boukas, Damien Ernst, Anthony Papavasiliou, and Bertrand Cornélusse got the Best Paper Award at 15th International Conference on the European Energy Market, June 2018, Łódź, Poland.

[10] Research paper: "*Fostering Share&Charge through proper regulation*" authored by Fanny Vanryckel, Damien Ernst and Marc Bourgeois got the Best Paper Award at the 7th Conference on the Regulation of Infrastructures organized by the Florence School of Regulation, June 2018, Florence, Italy.

[9] Research paper: "*Simple connectome inference from partial correlation statistics in calcium imaging*" authored by Antonio Sutera, Arnaud Joly, Vincent, François-Lavet, Zixiao Aaron Qiu, Gilles Louppe, Damien Ernst and Pierre Geurts got the First Price at the ECML 2014 Connectomics Workshop. This paper explains the methodology we developed for winning the Connectomics challenge.

[8] Research paper: "*Automatic discovery of ranking formulas for playing with multi-armed bandits*". F. Maes, L. Wehenkel and D. Ernst. In Proceedings of the 9th European Workshop on Reinforcement Learning (EWRL 2011), Athens, Greece, September 9-11, 2011. got the Best Paper Award.

[7] Research paper: "*Model-free Monte Carlo-like policy evaluation*". R. Fonteneau, S.A. Murphy, L. Wehenkel and D. Ernst. In Proceedings of Conférence francophone sur l'Apprentissage Automatique (CAp) 2010, Clermont-Ferrand, France, 17-19 May 2010. (16 pages) got the Best Student Paper Award.

[6] Prize ULG network 2009 (in French : Prix réseau ULg) for my research work in the year 2008.

[5] Research paper: "*A cautious approach to generalization in reinforcement learning*". R. Fonteneau, S.A. Murphy, L. Wehenkel and D. Ernst. In Proceedings of the 2nd International Conference on Agents and Artificial Intelligence (ICAART 2010), Valencia, Spain, 22-24 January 2010. (10 pages) got the Best Student Paper Award.

[4] Research paper: "*On the fairness of centralized decision-making strategies in multi-area power systems*". Y. Phulpin, M. Begovic, M. Petit, J.-B. Heyberger and D. Ernst. In Proceedings of the 16th Power Systems Computation Conference (PSCC-2008), Glasgow, UK, 14-18 July 2008. (7 pages) was selected as one of the five best papers of the 16th Power Systems Computation Conference (PSCC-2008).

[3] Research paper: "*A comparison of Nash equilibria analysis and agent-based modelling for power markets*". T. Krause, G. Andersson, D. Ernst, E.V. Beck, R. Cherkaoui and A. Germond. In Proceedings of the 15th Power System Computation Conference (PSCC-2005). Liège, Belgium, 22-26 August 2005. (8 pages) was selected as one of the five best papers of the 15th Power Systems Computation Conference (PSCC-2005).

[2] Working Group Recognition Award 2000 (PES IEEE) For Services Rendered as Member of the Task Force on Techniques for Power System Stability Limit Search.

[1] Melchior Salier 1998 Prize for my Master Thesis "*Couplage SIME/EUROSTAG et mise au point d'une approche d'évaluation et de commande curative de la stabilité transitoire des réseaux électriques*".

Current PhD students and post-docs

PhD students

[18] Lize Pirenne. *Large Language Models for the industry (2023-)*
[17] Arthur Louette. *Design of intelligent systems for delta robots using reinforcement learning (2023-)*
[16] Laurie Boveroux. *Optimizing complex large-scale scheduling problems using reinforcement learning (2023-)*
[15] Matthias Pirlet. *Artificial intelligence for energy markets (2023-)*
[14] Maurizio Vassallo. *Reinforcement learning for smart grids (2022-)*
[13] Elie Kadoche. *Intelligent control of off-shore wind farms (2022-)*
[12] Florent De Geeter. *Biological models for improving Deep learning (2021-)*

[11] Bardhyl Miftari. Graph-Based Optimization Modelling Language (2021-)
[10] Gaspard Lambrechts. *Deep RL for POMDP (2021-)*
[9] Jocelyn Mbenoun. *Study and optimization of multi-energy systems (2021-)*
[8] Amina Benzerga. *Optimisation for the energy transition (2021-)*
[7] Vageesh Chakrapani Manakari. *Smart algorithms for renewable energy communities (2020-)*
[6] Adrien Bolland. *Reinforcement learning for energy markets (2020-)*
[5] Antoine Dubois. *The Global Grid: analysis and optimization (2019-)*
[4] Koen Boeckx. *Artificial intelligence for advanced defence systems* (2018-)
[3] David Vangulick. *Blockchain and electricity networks* (2015-)
[2] Samy Attaihar. *Reinforcement learning and microgrids* (2015-)
[1] Pascal Leroy. *Reinforcement learning for advanced defence systems* (2018-)
Post-docs
[3] Guillaume Derval. *Optimisation for energy systems* (2022-)
[2] Alizera Bahmanyar. *Integration of EVs in distribution networks (2020-)*
[1] Raphael Fonteneau. *Energy and artificial intelligence (2012-)*

Past PhD students and post-docs

Phd students
[16] Thibaut Théate (2019-2023). Thesis : "Artificial Intelligence Techniques for Decision-Making in Market Environments"
[15] Mathias Berger (2018-2023). Thesis: "Low-Carbon Energy System Design: Methods, Software and Applications".
[14] Nicolas Vecoven (2017-2022). Thesis: "Introducing biological neuronal dynamics and neuromodulation in artificial neural networks".
[13] David Radu (2017-2021). Thesis: "Siting Strategies for Variable Renewable Generation Assets in Capacity Expansion Planning Frameworks"
[12] Ioannis Boukas (2016-2021). Thesis: "Deep Reinforcement Learning for the Control of Energy Storage in Grid-Scale and Microgrid Applications". Co-supervised by Bertrand Cornélusse.
[11] Miguel Manuel de Villena (2016-2021). Thesis: "Smart Regulation for Distribution Networks – Modelling New Local Electricity Markets and Regulatory Frameworks for the Integration of Distributed Electricity Generation Resources". Co-supervised by Raphael Fonteneau.
[10] Frédéric Olivier (2013-2018). Thesis: "Solutions for integrating photovoltaic panels into low-voltage distribution networks". Co-supervised by Raphael Fonteneau.
[9] Vincent François Lavet (2014-2017), Thesis: "Contributions to deep reinforcement learning and its applications in smart grids". Co-supervised by Raphael Fonteneau.
[8] Michael Castronovo (2012-2017), Thesis: "Offline Policy-search in Bayesian Reinforcement Learning". Co-supervised by Raphael Fonteneau.
[7] Quentin Gemine (2012-2016), Thesis: "Active network management for electrical distribution systems". Co-supervised by Bertrand Cornélusse.
[6] Sébastien Mathieu (2012-2016), Thesis: *"Flexibility services in the electrical system".* Co-supervised by Quentin Louveaux and by Bertrand Cornélusse.
[5] Firas Safadi (2010-2015), Thesis: "*Artificial Intelligence in Video Games: Towards a Unified Framework*". Co-supervised by Raphael Fonteneau.
[4] David Lupien St-Pierre (2010-July 2013), Thesis: "*Contributions* to *Monte Carlo Tree Search*", Co-supervised by Quentin Louveaux.
[3] Jing Dai (2008-2011), Thesis: "*Frequency control coordination among asynchronous AC areas connected by a multi-terminal HVDC grid*". Co-supervised by Yannick Phulpin (SUPELEC). n
[2] Florence Belmudes (2007-2012), Thesis: "*Identification of dangerous contingencies for large scale power system security assessment*". Co-supervised by Louis Wehenkel
[1] Raphael Fonteneau (2007-2011), Thesis: "*Contribution to batch mode reinforcement learning*". Co-supervised by Louis Wehenkel.

Post-docs

[15] Ioannis Boukas. *Optimising flexibility in water systems* (2021-2023)
[14] Michael Castronovo. *Reinforcement learning for energy systems* (2017-2022)
[13] Miguel Manuel de Villena. *Regulation for renewable energy communities (2021)*
[12] Hatim Djelassi. *Optimisation for multi-energy systems (2020-2021)*
[11] Yves Vanaubel. *Intelligent computing for future energy systems (2018-2021)*
[10] Quentin Gemine. *Smart operation of microgrids* (2016-2020)
[9] Sébastien Mathieu. Intelligent computing for future energy systems (2017-2020)
[8] Gilles Meyer (2016-2018). Energy Management Systems for microgrids
[7] Adrien Couetoux (2014-2016). Reinforcement learning
[6] Bertrand Cornélusse (2013-2016). Smart Grids
[5] Aivar Sootla. (2014-2016). Optimal control and synthetic biology
[4] Tobias Jung (2010-2013). Reinforcement learning with application to computer networks
[3] Efthymios Karangelos (2012-2014). Risk-based operation of power systems
[2] Francis Maes (2012). Reinforcement Learning
[1] Emmanuel Rachelson (2010). Reinforcement Learning

Supervision of master students

I supervise since the academic year 2006-2007 in average five master theses per year in the fields of electricity networks, artificial intelligence and sustainable energy.

Teaching experience

"*Optimal decision making for complex problems*" for master students in computer/data Science from the ULiège. Class taught since academic year 2017-2018, 60 hours.
"*Electrical energy systems*" for master students in environment, Class taught since academic year 2015-2016, 30 hours.
"*Sustainable energy*" for 3rd bachelor engineering students of the ULiège. Class taught since academic year 2012-2013, 30 hours.
"*Energy markets*" for 2nd master engineering students of the ULiège. Class taught since academic year 2011-2012, 60 hours.
"*Artificial autonomous intelligent agent*" for 3rd year students at SUPELEC. Class taught during academic years 2006-2010, 8 hours.
"*Numerical methods and optimisation*", for 2nd year students at SUPELEC. Class taught during academic year 2006-2007, 16 hours.
"*Circuit theory*" for 3rd year engineering students at the ULiège. Teaching Assistant, 1998, 15 hours.

Participation to European community research projects

[5] "*Generally Accepted Reliability Principle with Uncertainty modelling and through probabilistic Risk assessment*" Acronym: GARPUR.
[4] "*Resilience and Survivability for Future Networking: Framework, Mechanisms, and Experimental Evaluation*". Acronym: RESUMET. Contract Number**:** FP7 – 224619.
[3] "*Simulation and state estimation of smart electricity transmission networks*". Acronym: PEGASE. Project Reference: 211407.
[2] "*EXperimentation of a Monitoring and control system for managing vulnerabilities of the European INfrastructure for Electric power exchange*". Acronym: EXaMINE. Project Reference: IST-00-3-1A.
[1] "*Open market access and security assessment system (dynamic stability of the electrical networks)*". Acronym: OMASES. Project Reference: ENK6-CT-2000-00064.

Services to the scientific community

Activities as a reviewer:

I review in between 20-40 papers per year for journals and conferences in the field of power systems, machine learning and control theory. I also review around 15 research projects per year for governmental research agencies located in European countries (France, The Netherlands, Switzerland, Belgium, etc).

Organizer:

2023 : CIRED 2023 (with the AIM)

2021: Organisateur de la journée d'étude AIM sur "La révolution digitale intelligente des systèmes énergétiques"

2020: PMAPS

2014: JFPDA

Member of program committees:

2018: PSCC

2016: PSCC

2014: PSCC, JFPDA, ADPRL

2013: JFPDA, ICML, ECML, TAAI (Technologies and Applications of Artificial Intelligence)

2012: Benelearn, Journées Francophones Planification, Décision, et Apprentissage pour la conduite de systèmes (JFPDA), ICML, EWRL, NIPS.

2011: Adaptive Programming and reinforcement learning (ADPRL), ICML, PSCC, Neural Information Processing Systems (NIPS), Benelearn, Journées Francophones de Planification, Décision et Apprentissage pour la conduite de systèmes (JFPDA).

2010: ICML, ECML, Benelearn.

2009: European Conference on Machine Learning and Principles and Practice of Knowledge (ECML), International Conference on Machine Learning (ICML), International Joint Conferences on Artificial Intelligence (IJCAI), Benelearn.

2008: Power System Computation Conference (PSCC), European Workshop on Reinforcement Learning (EWRL), The Annual Machine Learning Conference of Belgium and the Netherlands (Benelearn).

Member of PhD juries:

[58] Ghada Sokar, TU-Eindhoven, "Learning Continually Under Changing Data Distributions", October 2023.

[57] Jochen Bernhard Stiasny, DTU, "Physics-Informed Neural Networks for Power System Dynamics", September 2023.

[56] Sumeyra Demir, TU-Eindhoven, "Statistical arbitrage trading on electricity markets using deep reinforcement learning", June 2023.

[55] Léonard Hussenot, INRIA-Lille, "Apprenticeship learning: Transferring human motivations to artificial agents", December 2022.

[54] Louis Desportes, ETIS, ENSEA, "Apprentissage, prédiction et optimisation des apports énergétiques pour un bâtiment à faible impact environnemental", December 2022.

[53] Palo Morato, Université de Liège, "Optimal Inspection and Maintenance Planning for Deteriorating Structures through Dynamic Bayesian Networks and Markov Decision Processes", September 2021.

[52] Tanguy Levent, Institut Polytechnique de Paris, "Reinforcement Learning application for Energy Management of Microgrids", December 2020.

[51] Taha Abd El Halim Nakabi, University of Eastern Finland, "Computational intelligence for smart grid flexbility", Decembr 2020.

[50] Hussain Kazmi, KUL, "Data-driven Modelling and Control of Energy-Flexible Residential Loads", July 2019.

[49] Marie Wehenkel, ULiège, "Characterization of neurodegenerative diseases with tree ensemble methods: the case of Alzheimer's disease", September 2018.

[48] Frédéric Olivier, ULiège, "Solutions for integrating photovoltaic panels into low-voltage distribution networks", July 2018.

[47] Benoit Mattlet, ULB, "Potential benefits of load flexibility. Focus on the Belgian distribution system", May 2017.

[46] Julien Perolat, INRIA-Lille Nord Europe, "Reinforcement Learning: The Multi-Player Case", December 2017.

[45] Lazaros Exizidis, UMons, "Electricity Markets with High Wind Power Penetration: Information Sharing and Incentive-Compatibility", December 2017.

[44] Mohammad Nazari, KTH, "Control and planning of multi-terminal HVDC transmission systems", October 2017.

[43] Vincent François, Université de Liège, "Contributions to deep reinforcement learning and its applications in smart grids", September 2017.

[42] Navikkumar Modi, Centrale-Supelec, "Machine learning and statistical decision making for green radio", May 2017.

[41] Tiago Soares, Technical University of Denmark, "Renewable energy sources offering flexibility through electricity markets", April 2017.

[40] Michael Castronovo, University of Liège, "Offline Policy-search in Bayesian Reinforcement Learning", March 2017.

[39] Arnaud Joly, University of Liège, "Exploiting random projections and sparsity with random forests and gradient boosting methods - Application to multi-label and multi-output learning, random forest, model compression and leveraging input sparsity", February 2017.

[38] Alejandro Marcos Alvarez, University of Liège, "Computational and Theoretical Synergies between Linear Optimization and Supervised Machine Learning", December 2016.

[37] Vincent Krakowski, MINES ParisTech, "Intégration du renouvelable et stratégies de déploiement du de déploiement du réseau électrique réseau électrique: réconciliation d'échelles spatio réconciliation dans des exercices prospectifs dans des exercices de long terme", December 2016.

[36] Quentin Gemine, University of Liège, "Active Network Management for Electrical Distribution Systems", November 2016.

[35] Sebastien Mathieu, University of Liège, "Flexibility services in the electrical system", March 2016.

[34] Amaury Johnen, University of Liège, "Indirect quadrangular mesh generation and validation of curved finite elements", March 2016.

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