

Alexandre Dolgui

Fellow of IISE, Distinguished Professor and Head of Automation, Production and Computer Sciences Department

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www.webofscience.com/wos/author/record/K-1688-2013
scholar.google.com/citations?user=74xSjB0AAAAJ
www.researchgate.net/profile/Alexandre_Dolgui



Citations = **29364** (Google scholar), **16086** (Scopus), **13286** (ISI WoS)
h-index = **79** (Google scholar), **59** (Scopus), **54** (ISI WoS)
i10-index = **303** (Google scholar), **217** (Scopus), **195** (ISI WoS)

PROFESSIONAL EXPERIENCE

IMT Atlantique (former *Ecole Nationale Supérieure des Mines de Nantes* and *Telecom Bretagne*, www.imt-atlantique.fr), France:

2015 – present, Full Professor of Exceptional Class, Head of Department of Automation, Production and Computer Sciences, Member of Executive Committee of the LS2N - CNRS UMR 6004 (coordinator of LS2N teams at the campus IMT in Nantes)

Ecole Nationale Supérieure des Mines de Saint-Etienne (www.mines-stetienne.fr), France:

2011 – 2015, Full Professor of Exceptional Class, Deputy Director of CNRS Lab. LIMOS - UMR 6158, Responsible of Division on Decision Aid in Production Systems and Logistics of the Laboratory, Head of the MSc and PhD programs in Industrial Engineering, (2011 – 2014, Deputy Director for Research of Henri Fayol Institute)

2003 – 2011, Full Professor of 1st Class, Director of the Centre for Industrial Engineering & Computer Science as well as the Head of Industrial Management team.

University of Troyes (www.utt.fr), Industrial Engineering Dept., France:

2001 – 2003, Full Professor, Head of the Graduate Program in Production Management

1996 – 2001, Associate Professor of 2nd (tenure in June 1997), then 1st Class, Head of Graduate Program in Production Management

Ecole Nationale Supérieure des Mines de Nancy (www.mines.inpl-nancy.fr)/*IUT de Roanne*, France:

1994 – 1996, Assistant Professor in Computer Science and Industrial Engineering

Belarusian State University of Informatics and Radio-electronics (former Minsk Radio-engineering Institute – www.bsuir.by), Belarus:

1991 – 1997, Associate Professor in Applied Mathematics and Computer Science

1988 – 1991, Assistant Professor in Computer Science and IT technologies

1986 – 1988, Researcher in Industrial Engineering

Guest Professor

2019 (one week), Fuzhou University, China

2018, 2017 (two weeks), Bandung Institute of Technology, Bandung, Indonesia

2015 (August - September), University of Chinese Academy of Sciences, Beijing, China

2014 (one week), Hefei University of Technology, China

2014 (two weeks), Università degli Studi di Modena e Reggio Emilia, Italy

2013 (one week), University of Science and Technology of China, Hefei, China

2005 (August - September), Queen's School of Business, Kingston, Canada

2002 (December), University of Technology of Szczecin, Poland

Since 1996, every year at least two weeks (often one month), National Academy of Sciences, Belarus

1994 (6 months), SAGEP team, INRIA-Lorraine/IUT de Metz, France

1992 – 1993 (9 months), SAGEP team, INRIA-Lorraine, Metz-Nancy, France

EDUCATION

2000 Dr. Habil. in Industrial Engineering, University of Technology of Compiègne, France

1992 Docent in Computational Methods & Programming, Ministry of Research & Education, Russia

1990 Ph.D. in Engineering Cybernetics and Computer Aided Production Management, Academy of Sciences of Belarus, Institute of Engineering Cybernetics, Minsk, Belarus, USSR

1986 Certificate of doctoral study in Computer Aided Production Management, Minsk Radio-engineering Institute, Belarus, USSR

1983 M.Sc./Engineer in Automated Systems of Data Processing and Management (with Honors, the valedictorian of graduating class), Minsk Radio-engineering Institute, Belarus, USSR

RECENT AWARDS

2024 **Top trending article 2023** by the International Journal of Production Research (Taylor & Francis)

2023 **Best paper award 2023** by Omega (Elsevier)

2023 **Highly Cited Researcher 2023** by Clarivate (Web of Science)

2023 3 papers are awarded by the International Journal of Production Research as most cited papers (top 25) published in 2021-22

2022 **Highly Cited Researcher 2022** by Clarivate (Web of Science)

2022 Best paper award at the 39th Workshop on Combinatorial Mathematics and Computational Theory, June 24-25, Taipei, Taiwan

- 2022** *IIE Transactions on Design and Manufacturing Best Paper Award* (Institute of Industrial and Systems Engineers), USA
2022 Best paper award 2021 of Renmin University of China, China
2021 **Highly Cited Researcher 2021 by Clarivate** (Web of Science)
2021 6 papers are awarded by the International Journal of Production Research as most cited papers (top 25) published in 2020
2020 **The IIE Fellow Award (Institute of Industrial and Systems Engineers), USA**
2020 3 papers are awarded by International Journal of Production Research as most cited papers (top 20) published in the journal in 2019
2019 3 papers are awarded by International Journal of Production Research as most cited papers published in the journal in 2018
2018 *IEOM Distinguished Educator Award*, Industrial Engineering and Operations Management Society (IEOM)
2017/22 Honorary Adjunct Professor in Industrial Engineering, Bandung Institute of Technology (ITB), Indonesia
2013 *Chinese Academy of Science Visiting Professorship for Senior International Scientists*, grant number 2013T2J0054
2011 *Annual Award of the French National Committee of the International Federation of Automatic Control (IFAC)* (one person per year obtains this award)
2008 *IIE Transactions on Design and Manufacturing Best Paper Award*
2007/08 *Biannual Best Research Award of the National Academy of Science of Belarus* (section: Physics, Mathematics & Computer Science)
2018 Commended Award at 6th International Conference on Dynamic in Supply Chain, Bremen, Germany
2015 Best Application Paper Award at 15th Triennial IFAC Symposium INCOM, Ottawa, Canada
2011 Scientific Excellence Award of Saint-Etienne Metropolis, France
2006 Special Award of the IFAC French National Committee for IFAC symposium INCOM'2006

PROFESSIONAL SOCIETY POSITIONS

Fellow, Institute of Industrial and Systems Engineers (IIE), elected in 2020; Senior Member, 2005 – 2019
Distinguished Fellow of International Engineering and Technology Institute (IETI), elected in 2019
Chair of the IFAC Technical Committee TC 5.2 "Manufacturing Modelling for Management and Control", 2011 – 2017
Vice-chair of the IFAC Technical Committee TC 5.2 "Manufacturing Modelling for Management and Control", 2017 – present
Member of the Board of the International Foundation for Production Research (IFPR), 2005 – present
IFAC Pavel J. Nowacki **Distinguished Lecturer** for the 2023-2026
Active Fellow of the European Academy for Industrial Management (AIM), elected in 2013
Chair of Working Group "Supply Network Engineering", IFAC TC 5.2, 2005 – present
Chaired of Working Group "Reconfigurable Manufacturing Systems", IFAC TC 5.2, 2011 – 2015
Chaired Working Group "Design and Control of Flexible and Reconfigurable Manufacturing Systems", IFAC TC 5.1, 2002 – 2011
Member of:
IFAC *Strategic Planning Group*, 2012
IFAC *Task Force Committee* on Systems and Control-Decision Research Agenda, 2015
IFAC Technical Committee TC 5.1 "Manufacturing Plant Control", 2001 – present
IFAC Technical Committee TC 5.2 "Manufacturing Modelling for Management and Control", 2008 – present
IFIP Working Group 5.7 "Advances in Production Management Systems", 2012 – present
IFIP Working Group 5.8 "Enterprise Interoperability", 2006 – present
IEEE Systems Council Analytics and Risk Technical Committee, 2014 – present
IEEE SMC Technical Committee on Social and Economic Security, 2017 – present
Society of Collaborative Networks (SoColNet), 2006 – present
INFORMS, IEEE, ROADEF, ByORS, and i4e2

Founding member of EVI - "European Virtual Institute on Innovation in Industrial Supply Chains & Logistic Networks", 2007 – present

EDITORIAL BOARDS OF SCHOLARLY JOURNALS

Editor-in-Chief of International Journal of Production Research (Taylor & Francis), since 03/2012
Consulting Editor of International Journal of Systems Science (Taylor & Francis), 2009 –
Area Editor of Computers & Industrial Engineering (Elsevier), 2010 – present
Department Editor of Modern Supply Chain Research and Applications (Emerald), 2018 – present
Advisor of Management and Business Review, <https://mbrjournal.com>, 2021 –
Advisor of Journal of Civil Engineering and Management (Taylor & Francis), since 2014
Advisor of Cleaner Logistics and Supply Chain, Elsevier, since 2020

Past Associate Editor:

IEEE Transactions on Industrial Informatics, 2005–2008
International Journal of Systems Science (Taylor & Francis), 2006 – 2009
Omega –The International Journal of Management Science (Elsevier), 2010 – 2013
Européen Journal des Systèmes Automatisés (Hermès Science), 2007– 2019
Presently *Editorial Board Member* for 22 other International Journals:
International Journal of Production Economics (Elsevier), since 2009
International Journal of Systems Science (Taylor & Francis), since 2005
Int. J. of Manufacturing Technology and Management (InderScience), since 2005
Int. J. of Engineering Management and Economics (InderScience), since 2007

Journal of Decision Systems (Hermes Science), since 2009
Management and Production Engineering Review (Polish Academy of Sciences), since 2011
Journal of Algorithms and Optimization (World Academic Publishing), since 2013
Proceedings of SPII of Russian Academy of Sciences, since 2014
Technological and Economic Development of Economy (Taylor & Francis), since 2014
Journal of Supply Chain Management Science (TU Delft, The Netherlands), since 2015
International Journal of Inventory Research (InderScience), since 2015
Risk and Decision Analysis (IOS Press), since 2015
International Journal of Advances in Systems Science and Applications, since 2017 (<http://ijassa.ipu.ru/ojs/ijassa/about>)
International Journal of Supply and Operations Management, since 2017 (IJSOM - <http://www.ijssom.com>)
International Journal of Intelligent Computing and Cybernetics, since 2017 (<http://www.emeraldinsight.com/journal/ijicc>)
Informatika, a journal of the National Academy of Sciences of Belarus, since 2017 (<http://inf.grid.by/jour/index>)
Journal of Information Technologies and Computing Systems, Russia, since 2018 (<http://jitcs.ru>)
Modern Supply Chain Research and Applications, since 2018
International Journal of Production Management and Engineering, Spain, since 2019 (polipapers.upv.es/index.php/IJPM)
Advances in Industrial Engineering, Iran, since 2019
Logistics, since 2021 (MDPI, open access, www.mdpi.com/journal/logistics)
Revue Française de la Gestion Industrielle, since 2021, Lavoisier

Formerly Editorial Board Member for

IFAC-PapersOnLine, 2011 – 2017 (<http://www.journals.elsevier.com/ifac-papersonline>)
Journal of Mathematical Modelling and Algorithms (Springer), 2001 – 2015
Production & Manufacturing Research (Taylor & Francis), 2013 – 2022
Mathematical Problems in Engineering (Hindawi), 2014– 2019
Int. J. of Simulation and Process Modelling (InderScience), 2005– 2019
Decision Making in Manufacturing and Service (AGH University, Poland), 2015– 2020

PROFESSIONAL SERVICES AND HONORS

Member of Scientific/Program Committee for more than 250 International Conferences, for example: SEMIT 2023, ODSIE 2023, ICCAD'23, AMEST 2022 (IFAC), MIM 2022 (IFAC), IMS (IFAC)CASE'21 (IEEE), icRS 2021 (Ireland), APMS'21 (IFIP), INCOM'21 (IFAC), ICOSCM 21 (India), CIGI-QUALITA'2021, APMS'2020, CIE-50 (2020), IWSPE 2020, ISSAT'2020, ILS'2020, ICINCO'2020, ICITAM 2019, OPTIMA'2019, CIGI-QUALITA'2019, APMS'2019, IESM'2019, ICINCO'2019, DASA'19, DSBFI 2019, MIM'2019 (IFAC), Tanaev's readings 2018, ISSPM'2018, TORS'2018, INCOM'2018 (IFAC), ICPR Americas 2018, ICINCO'2018, OPTA-2018, IWSPE 2018, GSC'2018, DMMS'2017, CIE-47 (2017), CIGI'2017, ICPR'2017, TAORS'2017, CoDIT'2017 (IEEE), CSAE'2017, ICINCO'2017, ICORES'2017, ICMDSM'2017, RIPE'2017, APMS'2016 (IFIP), CSIST'2016, IWTSCE'2016, ICSI&GCSI'2016, IMS'2016 (IFAC), DMO'2016, Tanaev's readings 2016, MOSIM'2016, 19th IWSPE, AMEST'2016 (IFAC), CoDIT'2016 (IEEE), ROADEF'2016, ICC'2016, ILS'2016, MIM'2016 (IFAC), LSS'2016 (IFAC), MCPL'2016 (IFAC), TAORS'2015, ISARCRM'2015 (IEEE), ICA'2015, CPI'2015, IESM'2015, APMS'2015 (IFIP), ICPR-23, ICINCO'2015, INCOM'2015 (IFAC), MCO'2015, ROADEF'2015, APMS'2014 (IFIP), ROADEF'2014, GSC'2014, DT'2014, Tanaev's readings 2014, ICINCO'2014, ICIEM'2014, PRO-VE'14 (IFIP), MOSIM'14, CSIST'2013, IESM'2013 (i4e2), CIE'43, PRO-VE'13 (IFIP), NICST'2013, MCPL'2013 (IFAC), APMS'2013 (IFIP), ROIS'2013, ISAM'2013 (IEEE), ICINCO'2013 (IFAC), ICPR 22 (IFIP), LSS'2013 (IFAC), CIGI'2013, IMS'2013 (IFAC), ICNSC'2013 (IEEE), ICORES'2013, ROADEF'2013, WCECS'2012, APMS'2012 (IFIP), MITIP'2012, PRO-VE'12 (IFIP), ILS'2012, ICINCO'2012 (IFAC), CIFA'2012 (IEEE), ICCGI'2012, GSC'2012, MOSIM'12, ICORES'2012, ...

Advisor as well as Associate Editor for 20th IFAC World Congress, 2017 (Toulouse, France), Associate Editor for 21th IFAC World Congress (Berlin), 19th IFAC World Congress, 2014 (Cape Town, South Africa) and Technical Associate Editor for 18th IFAC World Congress, 2011 (Milano, Italy)

General Scientific Chair of the 12th IFAC Symposium INCOM'06 in St Etienne, France: 783 attendees including 544 academics, 239 industrial representatives, 57 countries; 16 special issues of international journals, co-sponsored by IFIP, IFORS, IEEE, etc.

www.emse.fr/fr/transfert/g2i/actualites/incom2006

General Scientific Chair of the 10th IFAC Triennial Conference MIM 2022 in Nantes, France (June 22 – 24, 2022): mim2022.com: 767 participants, 51 countries; 9 special issues of international journals. <https://hub.imt-atlantique.fr/mim2022/>

General Scientific Chair of the IFIP APMS 2021 in Nantes, France (September 5 – 9, 2021): 506 attendees. www.apms-conference.org/

Chairman of:

- *International Program Committee for the 9th IFAC triennial conference MIM'19, Berlin, Germany, co-sponsored by IEEE, IFIP, IFORS, IIEE, INFORMS, SCS: 744 participants from 51 countries*, <https://blog.hwr-berlin.de/mim2019>
- *Steering Committee for the 8th IFAC triennial conference MIM'16, Troyes, France: 540 participants from 52 countries, co-sponsored by IEEE, IFIP, IFORS, IIEE, INFORMS, SCS*, <http://mim2016.utt.fr>
- *International Program Committee for the 15th IFAC triennial symposium INCOM'2015, Ottawa, Canada: 483 participants from 53 countries, co-sponsored by IFIP, IFORS, IEEE*, <http://www.incom2015.org>
- *International Program Committee for the 7th IFAC Conference MIM'13 in St Petersburg, Russia: 455 participants from 54 countries, co-sponsored by IFIP, IFORS, IMACS*, <http://mim2013.org>
- *International Program Committee for the 14th IFAC Symposium INCOM'12 in Bucharest, Rumania: 463 participants from 47 countries, co-sponsored by IFIP, IFORS, IMACS, IEEE*, <http://www.incom12.ro>

- *International Program Committee* for the 13th IFAC Symposium INCOM'09 in Moscow, Russia: 654 participants from 55 countries, co-sponsored by IFIP, IFORS, <http://www.incom09.org>
- *Organizing Committee* for 3rd French Speaking International Conference MOSIM'01 (Troyes), France: 306 participants from 26 countries, co-sponsored by SCS, FrancoSIM, ESRA, EURO, and OR societies SVOR/ASRO, SCRO, ROADEF, www1.utt.fr/mosim01
- *International Program Committee* of SCM'02 (Szczecin, Poland) and MOSIM'04 (Nantes, France)

Co-Chair of:

- *Scientific Committee* for the International Conference on Green Supply Chain, GSC'2018, Greece, 2018 (with Joseph Sarkis)
- *International Program Committee* of the 7th International Conference "Optimization Problems and Their Applications" (OPTA-2018), Omsk, Russia (with Mikhail Khachay, Panos Pardalos and Anton Ereemeev)
- *Scientific Committee* for the International Conference on *Industrial Engineering and Systems Management*, IESM'2017, Saarbrücken, Germany (with Le Thi Hoai An), IESM'2015, Spain (with Ruben Ruiz) and IESM'2013, Morocco (with Gilbert Laporte)
- Annual meeting on *Production Systems* of the French research group GDR MACS of CNRS, 2013: 215 participants (with O. Battaïa)
- *Scientific Committee* of Annual Congress of the French Operational Research and Decision-Aid Society, ROADEF'2015, France (with Nadia Brauner and Farouk Yalaoui)
- Annual Congress of the French Operational Research and Decision-Aid Society, ROADEF'2011, in St Etienne, France (roadef2011.emse.fr): **618 participants** from 34 countries (with Xavier Delorme)
- Workshop on "Theory and Applications of Operations Research for Sustainability" at the Global Cleaner Production & Sustainable Consumption Conference, 2015, Sitges, Barcelona, Spain (with Carlos Bana e Costa, Erwin Pesch, Joseph Sarkis, Lenny Koh)
- *Technical Program Committee* for IEEE CoDIT'13, Tunisia (with H. Messaoud and M. Vidyasagar)

Permanent *Member of Steering Committee* for the IFAC International Symposium on Information Control Problem in Manufacturing INCOM, since 2015, and for the International French Speaking Conferences on Modelling and Simulation, MOSIM, since 2001 and the international conference on *Industrial Engineering and Systems Management*, IESM, since 2011

Steering committee member at POM 2023 in Paris.

Vice-Chairman of *Scientific Committee* for the International French Speaking Congress in Industrial Engineering, CIGI'2011, Canada

Chairman of Doctoral Consortium at the 5th International Conference on Operations Research and Enterprise Systems, (ICORES), February 23 – 25, in Rome, Italy.

Co-chair of Award Committee of the 17th IEEE International Conference on Automation Science and Engineering, August 23-27, 2021, Lyon, France.

Member of Organizing Committee DOM'2000 (Minsk, Belarus), IMS'03 (Nice, France), DOM'04 (Baikal, Russia), SFGP'07 (St Etienne, France), and Industrial Days 2000 of ROADEF (Troyes, France), as well as ManuFuture'2008 (St Etienne, France), 2015 IEEE ISARCRM (Beijing, China), ICPR'2019 (Chicago, USA)

Chaired:

- Working Group (**336 members**) on Production Systems Design of *French National Center for Scientific Research – CNRS* (www.univ-valenciennes.fr/GDR-MACS), 2003 – 2008
- Regional Working Group on Design and Management of Reconfigurable Manufacturing Systems (regional research cluster on Production Management), 2006 – 2010

Member of Steering Committee of the Rhone-Alps regional research cluster on Production Management (www.cluster-gospi.fr), 2006 – 2015

Member of Scientific Committees of ISTE Wiley on "Automation and Control - Industrial Engineering" and on "Systems Engineering", www.wiley.com, 2013 – present

Member of the Board for the book series on *Advances in Industrial and Systems Engineering*, published by Wiley, 2023 – present

INFORMS Fellow election reference person, www.informs.org, 2015

Member of IISE Committee on International Ambassadors, www.iise.org, since 2022

Member of Advisory Board for Handbook of Automation, Springer

Editor of the book series on Factory of the Future by ISTE Wiley, www.wiley.com, 2016 – present

Guest Editor of more than 40 special issues of scholarly journals: IJPR (18), IJPE (6), ANOR (3), EJOR, Omega, JIM (2), J Math Mod Alg in OR (4), IFAC Ann Rev Contr. (4), IFAC EAIA, J Eur Aut Syst, J Dec Sys (2), Int J of Simul & Proc Mod, Int J Supply Chain Mgmt and IEEE Transactions in Industrial Informatics.

Editor of 13 International Conference Proceedings: IFAC MIM'2022, IFIP APMS 2021, IFAC MIM'2019, IFAC MIM'2016, IFAC INCOM'2015, IFAC MIM'2013, IFAC INCOM'2012, ROADEF'2011, IFAC INCOM'2009, IFAC INCOM'2006, MOSIM'04, SCM'02, MOSIM'01, and NITE'96

Invited Session Organizer for (> 50 sessions): APMS'2021 (IFIP), EURO'2021, APMS'2020 (IFIP), 20th IFAC WC, MIM'2019 (IFAC), APMS'19 (IFIP), EURO'2018, ICPR-24 (IFPR), 19th IFAC WC, EURO'2016, MIM'2016 (IFAC), INCOM'2015 (IFAC), 18th IFAC WC, IFORS'14, IESM'13 (IEEE), MIM'13 (IFAC), EURO-INFORMS'13, META'12, 15th IFAC WC, APMS'12 (IFIP), INCOM'12 (IFAC), 17th IFAC WC, IIE Annual Meeting and Expo (Cancun, Mexico), EURO'10, MOSIM'09, INCOM'09 (IFAC), CIE39, IMS'2008 (IFAC), LT'07(IEEE), MCPL'2007 (IFAC), INCOM'06 (IFAC), MOSIM'06, 16th IFAC WC, MOSIM'04, MCPL'2000 (IFAC), etc.

Track (stream) co-chair for 15 conferences: 20th IFAC WC (2020), MIM'2019 (IFAC), MIM'2016 (IFAC), 19th IFAC WC, MIM'2013 (IFAC), 18th IFAC WC, INCOM'2018 (IFAC), INCOM'2015 (IFAC), EURO'2015, IFORS'2014, ROADEF'2014, ROADEF'2013, INCOM'12 (IFAC), INCOM'09 (IFAC), INCOM'06 (IFAC), etc.

Keynote presentations in invited sessions: INCOM'2015 (IFAC), 19th IFAC WC Cap Town'2014, MIM'2013 (IFAC), INCOM'2012 (IFAC), 18th IFAC WC Milano'2011, 17th IFAC WC Seoul'2008, 16th IFAC WC Praha'2005, and 15th IFAC WC B'02.

46 Invited keynote plenary talks: SEMIT 2023 (Turkey), Webinar INFORMS (USA), IEEE ICNSC 2023, IEEE IRASET (Marocco), ICSIF 2023 (Marocco), 8th IEEE ARTC 2023(China), DSI 2023 (France), IEOM'2022 (Italy), Webinar (Hong Kong), MIM'2022 (IFAC), 54th CIRP CMS 2021 (Patras), Webinar (USA), ICPR'2021 (IFPR), IESM'2019 (IEEE), ICITL 2019 (Windsor, Canada), ICLS 2019 (Taipei, Taiwan), 2 talks at

ORA'2019 (Nizhny Novgorod, Russia), NET'2019 (Moscow, Russia), OPTA 2018 (Omsk, Russia), LMSCM 2018 (Turkey), XIX Congress Portuguese Association of OR (Portugal), CIE48 (Auckland), Tanaev's readings 2018 (Belarus), IIEC 2018 (Iran), APIEMS'2017 (Indonesia), IESM'2017 (IEEE), ICPR-24 (IFPR), ICORES'2016 (INSTICC), Workshop on 60th anniversary of SALBP'2015 (France), ISARCRM'2015 (IEEE), Shaastarth'2015 (India), ICIEOM'2015 (IIE), Tanaev's readings 2014 (Belarus), ICIEOM'2014 (IIE), YAEM'2014 (IIE), CSM'2013, MIM'2013 (IFAC), ROIS'2013 (IEEE), COSI'2013, ICPR-22 (IFPR), ICINCO'12 (IFAC), ICIEOM'12 (Algeria), INCOM'09 (IFAC), LT'07 (IEEE), MCPL'2007 (IFAC), ACS'97 (Poland).

TEACHING EXPERIENCE

40 years of teaching experience in **ten** different Universities (one in Belarus, one in Italy and eight in France).

Designed and developed the following undergraduate and graduate courses:

IMT Atlantique (former Ecole Nationale Supérieure des Mines de Nantes), France

Introduction to Industrial Process and Logistics (undergraduate), 2016 – present

Combinatorial Design of Production Systems (undergraduate and post-graduate), 2016 – present

Ecole Nationale Supérieure des Mines de Saint-Etienne (Mines St Etienne), France

Optimal Design of Production Lines (undergraduate and post-graduate), 2003 – 2015

Planning and Scheduling (undergraduate and post-graduate), 2003 – 2006

Inventory Control (undergraduate and post-graduate), 2003 – 2008

Ecole Centrale de Lyon, France

Optimal Design of Production Lines (undergraduate and post-graduate), 2011 – 2015

Università degli Studi di Modena e Reggio Emilia, Italy

Optimal Design of Production Lines (undergraduate and post-graduate), 2014

Institute of Production Sciences (ISTP), Saint-Etienne, France

Optimal Design of Production Lines (undergraduate), 2003 – 2006

Planning and Scheduling (undergraduate), 2003 – 2006

Inventory Control (undergraduate), 2003 – 2006

University of Technology of Troyes (UTT), France

Optimal Design of Production Systems (undergraduate), 1996–2003

Discrete-Event Simulation; Operations Research; Production Management (undergraduate), 1996–2003

Optimal Design of Production Systems (post-graduate, 2001–2003)

IUT (Institute of Technology) of Roanne, France

Optimal Design of Production Systems (post-graduate), 2009 – 2011

Production Management; Design of Production Systems (undergraduate), 1995 – 1996

Ecole Nationale Supérieure des Mines de Nancy (Mines Nancy), France

Databases, Algorithms, C++, (undergraduate), 2014 – 2015

IUT (Institute of Technology) of Metz, Metz, France

Databases, Programming languages (undergraduate), 1994

Belarusian State University of Informatics and Radioelectronics (former Minsk Radio-engineering Institute), Minsk, Belarus

Statistics, Databases, Algorithms (undergraduate), 1988 – 1994

Programming languages (undergraduate), 1983 – 1992, 1994

Operations Research (undergraduate), 1985

Several of these courses were published as **textbooks** in Russian, French or English. The number of copies for the textbook “Programming on Personal Computers” (1993) has reached about 15,000.

Created and developed a Production Management graduate program at the University of Technology of Troyes (UTT), France, in 1996; *Headed* this program from 1996 to 2003

Created 2 new masters: A **Master of Science** in Industrial Engineering at the University of Technology of Troyes (with Prof. Chengbin Chu and Prof. Christian Prins in 2001) and another one at the Mines St Etienne (with Prof. Xiaolan Xie in 2007). Headed the latter and the **PhD program** in Industrial Engineering in St Etienne, 2011 - 2015.

Lead the projects BRAFITEC (with UDESC, Brazil) and ERASMUS (with TED, Turkey and West Pomeranian University of Technology in Szczecin, Poland) for academic exchanges, 2011- 2015.

Participated in the project EnsRotice (UNIT) to develop learning programs in Operational Research for French universities in 2010-11.

RESEARCH PROJECTS

Leader of 10 direct contracts with Industrial Partners:

- IRT Jules Verne, program PERFORM, Combinatorial design of reconfigurable manufacturing systems, 2018 – 2021 (400 Keuros)
- Naval group, Consulting activity, Planning and scheduling in assembly workshops, 2018 – 2021 (30 Keuros)
- Renault group, Optimization of the Global Supply Chain in Automotive Industry, 2013 – 2016 (350 Keuros)
- Casino group, Warehousing, Localization and Scheduling in Retail Supply Chain, 2013 – 2014 (70 Keuros)
- Simulation for Optimization of Production Lines, for:
 - CEA (French Commissariat for Atomic Energy), 2003, 15 Keuros
 - AT SA (Troyes), 2001, 15 Keuros
 - Meritor (St Dizier), 2000, 15 Keuros
 - Philips (Troyes), 1999, 15 Keuros

Long collaboration via the National Academy of Sciences of Belarus (case studies, consulting) with:

- Minsk Automatic Line Plant (MZAL), Belarus, Combinatorial design of machining lines, since 1997, mzal.by/en/
- Minsk Tractor Works (MTW Holding), Belarus, Combinatorial design of power transmissions, since 1997, www.belarus-tractor.com/en

Leader for one RIA European Project (funded by the European Commission, 6 mln euros), 2020-2023:

Project ASSISTANT "leArning and robuSt deciSlon Support systems for agile mANuFACTuring environments" Call H2020-ICT-2020-1, RIA, participants IMT Atlantique, University college Cork, Flanders Make, Technical University of Munchen, PANEPSTIMIO PATRON, Biti Innovations, SIEMENS AKTIENGESELLSCHAFT, INTRASOFT, ATLAS COPCO AIRPOWER, Siemens Gas and Power GmbH, PSA AUTOMOBILES.

ASSISTANT provides decision makers with generative design based software for all manufacturing decisions. Rather than writing ad hoc code for each manufacturing sector, it provides a set of intelligent digital twins that self-adapt to the manufacturing environment. It promotes a methodology that enhances generative design with learning aspects of AI thanks to the data available in manufacturing. ASSISTANT aims to synthesize predictive/prescriptive models adjusted to the shop floor for each decision levels. Digital twins will be used as oracles by ML in order to converge towards models in phase with reality. This means that rather than writing specific code to cover a restricted set of goals/scenarios/hypotheses for a manufacturing system and a decision level, ASSISTANT will aim at learning models that can be used by standard optimization libraries. In this context, ML is used to predict parameter values, characterize parameters uncertainty, and acquire physical constraints. ASSISTANT will experiment this methodology on a significant panel of use cases selected for their relevance in the current context of the digital transformation of production in major manufacturing sectors undergoing rapid transformations like the energy, the industrial equipment, and automotive sectors which already make extensive use of digital twins.

Leader for one ANR (funded by the National Agency of Scientific Research, 600 Keuros), 2022-2026: IMT Atlantique, ENSAM, Kedge Business School, AMU, Mines St Etienne

Project Reconfigurable: Reconfigurable manufacturing systems (RMSs) are not only new manufacturing paradigm offering a customized flexibility. They are also a basis to develop a new generation of sustainable production systems. A promising way toward sustainable production passes through the design and intensive development of reconfigurable and sustainable manufacturing systems. The goal of this project is to develop an efficient methodology of decision-making support for the design and reconfiguration of such systems. The problem consists in an optimal selection of modules or pieces of equipment and an assignment of tasks to modules optimizing a given criterion while considering the required throughput and constraints as well as uncertainties. The project considers 3 main steps: design, reconfiguration and real-time control. For each of these 3 steps, we will develop and integrate sustainability criteria alongside conventional ones. In addition, two additional steps will be considered. The first represents a preliminary phase of identification and modeling of criteria to be evaluated and integrated. The second will be a test and validation step via industrial case studies. In this project, we will mainly focus on the environmental and economic dimensions of sustainability. So, our criteria will be technological (drift, quality, reliability), economical (cost, time, resources used), environmental (energy, emissions ...) and organizational (human factors, skills, safety and health ...). Our goal is not including all possible real life criteria but rather to propose an integrated approach of sustainability for design, planning and real-time reconfiguration of RMS while considering uncertainties. The techniques used will be based on multi-scale modeling, process modeling, combinatorial optimization and robust optimization as well as on stability analysis of the obtained solutions, discrete events simulation, and machine learning techniques.

Team leader for 8 European Projects (funded by the European Commission):

- ACCURATE - Achieving resilience through manufacturing as a service, digital twins and ecosystems, HORIZON-CL4-2023-TWIN-TRANSITION-01-07, Accepted, starts in Dec 2023
- Advanced Platform for Manufacturing Engineering and Product Lifecycle Management (amePLM - FP7), 2011 – 2015 (with Fraunhofer IPA of Stuttgart, Germany, Politecnico di Torino, Italy, University of Nottingham, UK, Intel, Ireland, etc.), a case study for Mercedes Benz concerning assembly for engines (Overall budget: 3 Meuros, our budget: 200 Keuros), the number of workers at the assembly line was reduced from 29 to 25
- Collaborative DEMand and Supply NETWORKS (CODESNET - FP 6), 2004 – 2007, Fraunhofer IPA of Stuttgart, Germany, Politecnico di Torino, Italy, University of Nottingham, UK, Univ. of Marseille, etc. and 7 industrial partners (Overall budget 1.2 M euros, budget of team: 150 Keuros), EVI - "European Virtual Institute on Innovation in Industrial Supply Chains & Logistic Networks" was created.
- European Union INTAS Fellowship for Young Scientists: joint PhD training periods with the University of Sheffield (UK) and Unievrsity of Minsk (Belarus), 2005 – 2006 (70 Keuros for the team, post-doc of M. Pashkevich in St Etienne)
- Scheduling for Modern Manufacturing, Logistics and Supply Chains (INTAS), 2004 – 2007 (Leader J. M Proth, Overall budget: 150 Keuros; team: 15 Keuros)
- Scheduling and Assignment Models under Uncertainty and Real-time Constraints for Manufacturing, Communication, Computer-aided Design and Transportation (INTAS), 2001 – 2004 (Leader J. M Proth, Overall funding: 200 Keuros; team: 15 Keuros)
- Discrete Optimization Problems in Scheduling and Computer-aided Design (INTAS), 1997 – 2000 (Leader G. Finke, Overall: 200 Keuros; team: 15 Keuros)
- Integrated Manufacturing Conception Process: Methodology and real life applications (INTAS), 1997 – 2000 (Leader L. Barros, Overall budget: 200 Keuros; team: 15 Keuros)

Project leader for 5 Projects Funded by Regional Governments:

- Combinatorial Design of Reconfigurable Manufacturing Systems (RMS), region Pays de la Loire, 2017 – 2020 (250 Keuros)
- Balancing and Optimization of Machining Lines for PCI-SCEMM (Peugeot Citroën), region Rhone-Alps, 2005 – 2015 (110 Keuros)
- Reconfigurable Manufacturing Systems and Transformable Factories, Rhone-Alps, 2006 – 2009 (40 Keuros)
- Optimal Planning of Assembly System under Uncertainties, Champagne-Ardenne, 1996 – 1999 (20 Keuros)
- Assembly Line Design and Balancing, Champagne-Ardenne, 2000 – 2003 (15 Keuros)

Team leader for 2 Projects Funded by Regional Governments (Region Rhone-Alps):

- EuroLean (2009 – 2011), 20 Keuros

Project manager for a project Polonium (France – Poland):

- Simulation and Optimization of Supply Chains, French and Polish Governments, 2003 – 2005 (10 Keuros)

Co-leader of project PICS 6064 (French National Council for Scientific Research – CNRS):

- Design and Optimization of Reconfigurable Production Lines, France – Belarus, 2012 – 2015 (30 Keuros)

Leader of French team of the project PHC CAI YUANPEI 2013 (France–China):

- Modeling Supply Chain with Dual Channels under Green Environment and Uncertainties, 2013 – 2015 (15 Keuros)

Participating Expert in the French National (ANR) initiative:

- ARP FuturProd, 40 experts (half from industry and half academia) are working to define the French Program for Scientific Research on Production Systems for the Future (National Agency for Scientific Research - ANR), 2011 – 2013

Leader in the following 2 projects French-German Academy for Industry of the Future:

- Distributed Information in Supply chain (DISC), IMT-TUM, 2018 – 2020 (260 Keuros with 130 Keuros for our team)
- Reconfigurable and Sustainable Manufacturing Systems RSD, IMT- TUM, 2018 – 2020 (260 Keuros with 130 Keuros for IMT)

Participation in 20 Projects:

- Sustainable logistics of the future – FutureLOG, (The Research Council of Norway), 2021-2026
- Reconfigurable manufacturing systems and sustainability (Carnot Mines), 2021-2024
- Assembly and disassembly - Dreams (French-German Academy for Industry of the Future), 2020-2022
- Fileas Fog, Integrating Financial Health in Supply Chain Management (National Agency for Scientific Research - ANR), 2017 – 2021
- LOG-FLOW, Flow Simulation in Supply Chain Management, PHC Nusantara, Indonesia-France, 2017 – 2019
- Supply Chain Design and Management under Uncertainty, PHC Nusantara, Indonesia-France, 2019 – 2020
- IFIGENI - Industry of Future, Industrial Engineering (Institute Mines Telecom), 2017
- Decision Aid for Assembly/Disassembly Line Design under Uncertainty, Pays de la Loire, 2016 – 2017
- HOST – Hospital: Simulation and Optimization (ANR, Program TecSan), 2011 – 2014
- End-of-Life Items Collection and Disassembly Process Planning (region Rhone-Alps), 2012- 2015
- Design and Balancing Disassembly Lines (CNRS, GDR RO), 2012 – 2014
- ATHENA – Scheduling under Uncertainties (National Agency for Scientific Research - ANR), 2013 – 2017
- SCRIPT – Robust Design and Service Quality Indicators of Railway Transport (Agency for Scientific Research - ANR), 2012 – 2015
- International Associated Laboratory (LIA), Smart Computing for Sustainable Development, Franco-Chinese Laboratory (SCSD-FCLAB), CNRS, Blaise Pascal University, Mines de St Etienne, Harbin Institute of Technology, 2012 – 2015
- Labex IMobS3 - <http://www.imobs3.univ-bpclermont.fr>, co-responsible of the project on Reconfigurable Production Systems and Supply Chains, 2012 – 2015
- Re-commerce and Recycling of WEEE, project Funded by Regional Governments (Region Rhone-Alps), 2013 – 2015
- Design and Optimization of Reverse Supply Chains, Granted by Regional Governments (Region Rhone-Alps), 2013 – 2015
- Combinatorial Optimization in Disassembly Lines and Reverse Logistics, Granted by GdR RO (National Network in Operations Research), 2012 –2013
- Copilote: Collaboration and Information Control in Supply Chains, Funded by Regional Governments (Rhone-Alps), 2003 – 2005

12 Research grants of the French Ministry of Industry, each of them for 3 years for a PhD thesis:

- Stochastic optimization for production planning, 2019, 55 Keuros
- Managing supply chain under uncertainty: Application to the agri-food industry, 55 Keuros
- Decision Support in Design of Assembly and Transfer Lines, 2013, 100 Keuros
- Combinatorial Design of Disassembly Lines Under Uncertainties, 2011, 100 Keuros
- Multi-Level Assembly Systems Under Uncertainties, 2011, 100 Keuros
- Combinatorial Design of Production Lines, 2009, 100 Keuros
- Design of Production Lines Under Uncertainties: Sensitivity Analyze and Robust Approaches, 2008, 100 Keuros
- Lot-sizing and Sequencing of Production Lines Under Uncertainties, 2007, 100 Keuros
- Inventory Control in Supply Chain Under Uncertainty of Lead Times, 2005, 100 Keuros
- Decision Support Tool for Preliminary Design of Mass Production Machining Lines, 2004, 95 Keuros
- Operating Room Planning in Hospitals Under Uncertainties, 2004, 95 Keuros
- Modular Machining Lines: Modeling, Configuration and Optimization, 2006, 95 Keuros

Research grant of the French Ministry of Higher Education, Research and Innovation for 3 years (PhD thesis):

Optimization of Components Inventories and Supply Planning for Assembly Systems Under Uncertainties, 1998, 85 Keuros

ADVISOR FOR 6 DR HABIL THESEES

(second doctoral degree necessary to apply Full Professor positions, usually at least 7 years after PhD)

- *Simon Thevenin*, Optimization approaches to design and manage robust and resilience of manufacturing system, Defense in on Nov 25, 2023, IMT Atlantique
- *Nadjib Brahimi*, Contributions to Decision Integration Models in Supply Chain Planning, IMT Atlantique, Defense on September 8, 2022
- *Frédéric Grimaud*, Decision aid framework for support of SME in their conversion in the era of Industry 4.0, Mines St Etienne, Defense on December 17, 2020
- *David Lemoine*, Production and Maintenance Planning and Scheduling, IMT Atlantique, Nantes, Defense on September 9, 2020
- *Xavier Delorme*, Mathematical Modelling for Evaluation and Optimization of Complex Industrial Systems, Mines St Etienne, Defense on October 23, 2014
- *Olga Battaia*, Combinatorial Optimization for Configuration of Production Lines, Mines St Etienne, October 21, 2014

POST-DOC SUPERVISOR (search for funding and scientific supervision of projects)

(14 post-docs with 70 Keuros per Post-Doc = 980 Keuros of grants obtained)

- *Milad Elyasi* (Turkey), European project ASSISTANT, September 2022 – September 2023
- *Seyyed Ehsan Hashemi Petroodi* (IMT Atlantique), European project ASSISTANT, December 2021 – September 2023
- *Behnam Vahdani* (University of Teheran) Dynamic logistics planning in pandemic situations under demand uncertainty: case study of COVID-19, October 2020 – January 2022

- *Xavier Schepler* (University of Havre, France), Robust bin packing optimization, October 2016 – October 2017
- *Anshuman Chutani* (United-States, School of Management, Binghamton University, State University of New York), Retailer Supply Chain Modeling and Optimization, September 3rd, 2013 – September 3rd, 2014
- *Sergey Kovalev* (Ecole des Mines de St Etienne), Combinatorial Design of Production Lines, Ecole des Mines de St Etienne, March 1st, 2013 – September 30, 2013
- *Przemyslaw Korytkowski* (Poland, West Pomeranian University of Technology in Szczecin) Simulation-based Approaches for Optimization of Production Systems and Supply Chains, September 1st, 2012 – October 15, 2012
- *Evgeny Gafarov* (Russia, Moscow, Academy of Sciences, Institute of Control), Assembly Line Balancing, Scheduling, November 30th, 2011 – November 30th, 2012
- *Oncu Hazir* (Turkey, Ankara, TED University), Assembly Line Balancing, Cost Oriented Models, Robustness, November 4th, 2010 – July 31th, 2012
- *Nitin Seth* (Indian Institute of Foreign Trade, New Delhi), Supply Chain Management (with focus on sustainable business practices), August – November 2012
- *Pavel Borisovsky* (Russia, Omsk, Siberian Branch of Academy of Science), Assembly and Machining Line Balancing, Matheuristics, September 2nd, 2010 – December 23th, 2010
- *Maksim Pashkevich* (Belarus, Minsk, State University), Forecasting Slow Moving Item Demand, 6 months in 2005
- *Ivan Ihnatsenka* (Belarus, Grodno, Grodno State University), Assembly Line Balancing, Machining Line Design, Branch and Bound Algorithms, 12 months in 2004 as well as 6 months in 2006
- *Antoneta Bratcu* (Romania, "Dunarea de Jos" University of Galati), Assembly Line Balancing, Bucket Brigades, Simulation, 12 months in 2001– 2002 as well as 6 months in 2005

GRANTS FOR INVITED PROFESSORS

Grants for 75 months of salary to invite guest professors (~750 Keuros), invited colleagues from Belarus, China, Poland and Russia.

PHD THESIS SUPERVISOR

30 PhD theses in France have been completed under my supervision.

One of them was awarded as the best PhD thesis in 2007 by the CNRS (~ 2000 researchers, www.univ-valenciennes.fr/GDR-MACS/)

- *Benoit Loger*, Robust optimization in supply chain planning, Defense on Dec 21, 2023
- *Dan Luo*, Multi-level lotsizing under uncertainty, IMT Atlantique, Defense on Dec 8, 2023.
- *Paula Metzker Soares*, Stochastic optimization for production planning, HEC Montreal – IMT Atlantique, Defense on Nov 25, 2022
- *Sobhan Razm*, Managing supply chain under uncertainty: Application to the agri-food industry, Rennes Business School – IMT Atlantique, Defense on Nov 4, 2022
- *Seyyed Ehsan Hashemi Petroodi*, Combinatorial optimization for the configuration of workforce and equipment in reconfigurable assembly lines, IMT Atlantique, Defense on 9 December 2021.
- *Abdelkrim Ramzi Yelles Chaouche*, Decision aide for design and configuration of reconfigurable production lines, IRT Jules Verne – IMT Atlantique, 14 December 2021.
- *Ilhem Slama*, Lot-sizing in disassembly systems, University of Sfax–IMT Atlantique, Defense On September 27, 2020 (co-supervisor Prof. Masmoudi)
- *Alexandr Pirogov*, Robust Optimization of Production Lines with Parallel and Sequential Execution of Tasks, IMT Atlantique – University of Nantes, Thesis Defense on November 29, 2019 (co-supervisor: Prof. André Rossi)
- *Zouhour Guiras*, Joint Solving a Production Replenishment and Maintenance Planning Problem Under Uncertainty, University of Lorraine, Defense on January 13, 2019 (principal supervisor Prof. Nidhal Rezg)
- *Christian Serrano*, Optimization of Renault Supply Chain, Mines St Etienne, October 16, 2017 (co-supervisor: Prof. Xavier Delorme)
- *Muhammad Khoirul Khakim Habibi*, Integrated Optimization of End-of-Life Items Collection and Their Disassembly in Reverse Supply Chains, Mines St Etienne, Co-supervisors: Van-Dat Cung (INP Grenoble), Prof. Olga Battaïa (ISAE-Supaero, Toulouse), Thesis Defense on February 10, 2017
- *Sergey Malyutin*, Algorithms and software for decision support in design of assembly and transfer lines, Mines de St Etienne, Co-supervisors: Xavier Delorme (Mines St Etienne), Mikhail Kovalyov (Academy of Sciences of Belarus), Defense on October 24, 2016
- *Akram Chibani*, Reconfigurable Supply Chain Design and Management, University of Clermont-Ferrand, Co-supervisors: Xavier Delorme (Mines St Etienne), Henri Pierreval (French Institute of Advanced Mechanics), Thesis defense on December 4th, 2015
- *Lounes Bentaha*, Combinatorial Design of Disassembly Lines Under Uncertainties, Mines St Etienne and University of Michigan (United States), Co-supervisor: Jack Hu (Michigan), Defense on October 16, 2014
- *Oussama Ben Ammar*, Supply Planning for Multi-Level Assembly Systems Under Uncertainties, Mines St Etienne, October 9, 2014
- *Fatme Makssoud*, Optimal Reconfiguration of Machining Transfer Lines, Mines St Etienne, Defense on 20 May 2014
- *Sergey Kovalev*, Combinatorial Design of Production Lines: Analyze of Complexity and Optimization, Mines St Etienne, November 23th, 2012
- *Evgeny Gurevsky*, Design of Production Lines Under Uncertainties: Sensitivity Analyze and Robust Approaches, Mines St Etienne, Thesis Defense on December 13th, 2011
- *Kseniya Schemeleva*, Lotsizing and Sequencing of Production Lines Under Uncertainties, Mines St Etienne, December 13th, 2010
- *Mohamed Essafi*, Design and Optimization of Reconfigurable Manufacturing Lines, Mines St Etienne, December 8th, 2010
- *Aysegul Sarac*, Modeling and Decision Support when RFID is Introduced in Supply Chains, Mines St Etienne, co-supervisor: Stéphane Dauzère-Pérès, Thesis Defense on April 26th, 2010
- *Faïcel Hnaïen*, Inventory Control in Supply Chain Under Uncertainty of Lead Times, Mines St Etienne, December 8th, 2008
- *Thanh Trung Van*, Personalized Search in Scientific Digital Libraries, co-supervisor: M. Beigbeder, Defense on October 4th, 2008

- *Olga Guschinskaya*, Decision Support Tool for Preliminary Design of Mass Production Machining Lines with Multi-Spindle Heads, Mines St Etienne, Thesis Defense on November 27th, 2007 (**2007 Best PhD Award by the CNRS GDR MACS**)
- *Mehdi Lamiri*, Operating Room Planning Under Uncertainties, Mines St Etienne, co-supervisor: X. Xie, October 4th, 2007
- *Sana Belmokhtar*, Modular Machining Lines: Modeling, Configuration and Optimization, Mines St Etienne, December 11th, 2006
- *Lina Makdessian*, Configuration and Equipment Selection of Production Lines: Mon- and Multi- Objective Approaches, University of Technology of Troyes, France, Thesis Defense on June 20th, 2005
- *Anjali Awasthi*, Developing a Hierarchical Route Guidance System for Urban Networks, University of Metz, France (co-supervisor: Jean-Marie Proth), Thesis Defense on November 30th, 2004
- *Brigitte Finel*, Configuration of Machining Lines: Exact and Approximate Methods, University of Metz, France, (co-supervisor: François Vernadat), Thesis Defense on December 1st, 2004 (obtained 2008 **IIE Transactions Best Paper Award**)
- *Mohamed-Aly Ould Louly*, Optimization of Components Inventories and Supply Planning for Assembly Systems Under Uncertainties, University of Technology of Troyes, December 18th, 2001, **Best Paper Award** (MOSIM2001 www1.utt.fr/mosim01)

ONGOING PHD THESES

- *David Tremblet*, Digital twins and optimization via simulation in assembly line design and planning, IMT Atlantique, Defense in 2024.
- *Haed Tavakkoli*, Design and balancing assembly lines with cobots, IMT Atlantique, Defense in 2024
- *Daniel Sánchez Pineda*, Sustainable crowdshipping for E-commerce delivery, IMT Atlantique, Defense in 2025
- *Siwar Arbi*, Reconfigurable and sustainable manufacturing system design, IMT Atlantique, Defense in 2025

INTERNATIONAL PHD EXCHANGES

Participations in supervision of 12 additional PhD theses:

One thesis was prepared in collaboration with a university in Belarus and a university in UK:

- *Maksim Pashkevich*, Lead-time Demand Forecasting for Multiple Slow-Moving Items, State University of Belarus, Minsk (Supervisor: Y. Kharin), Ecole des Mines de St Etienne, France (co-supervisor: A. Dolgui), University of Sheffield, UK (co-supervisor: P. Fleming), with a funding from the **INTAS program for young researchers**, Thesis Defense was in Minsk in April, 2005

Research training for several foreign PhD candidates:

- Yangyang Huang, Government Loan and Buyer Financing in a Pull Supply Chain, Beihang University, Beijing, funded by the CRC, China, Oct 2022 – Oct 2023
- Jie Lu, Bayesian approaches for Supply chain management under uncertainty, University of the Chinese Academy of Science, Beijing, funded by the CRC, China, Oct 2022 – Oct 2023
- *Fuguo Zhao*, Modelling product line and distribution under dual channels in power industry, University of Science and Technology of China (Prof. Dash Wu), project PHC CAI YUANPEI (France–China), Stay in our Laboratory from November 1st 2013 to October 31st, 2014, Thesis Defense was in 2015
- *Jian Song*, Supply Chain Risk Modelling with Dual Channels, University of Science and Technology of China (Prof. Dash Wu), project PHC CAI YUANPEI (France–China), Stay in our Laboratory from November 1st 2013 to October 31st, 2014, Thesis Defense in 2015
- *Viatcheslav Sigaev*, Discrete Optimization Methods for Buffer Allocation in Unreliable Production Lines, *Omsk State University*, Russia (supervisors: Anton Eremeev and Alexander Kolokolov), several visits between 2004 and 2007, common work on papers, Defense on 10 December 2019
- *Luca Galloni*, Design of Lean Manufacturing Systems, Italy, supervisor: Rita Gamberini, *Università degli Studi di Modena e Reggio Emilia*, Stay in our Laboratory from November 1st 2012 to January 31st, 2013, Defense in 2013
- *Alberto Garcia-Villoria*, The Response Time Variability Problem, supervisor: Rafael Pastor, *Polytechnic University of Catalonia* (UPC), Barcelona, European Doctoral Program, 3 months in St Etienne in 2009, Defense was on July 5th, 2010
- *Liliana Capacho*, ASALBP: the Alternative Subgraphs Assembly Line Balancing Problem, supervisor: Rafael Pastor, *Polytechnic University of Catalonia* (UPC), Barcelona, European Doctoral Program, 3 months in St Etienne in 2005, Defense on February 29th, 2008
- *Przemyslaw Korytkowski*, Modeling and Optimization of Production Capacity in Intangible Flow Production Systems, *University of Technology of Szczecin*, Poland, Supervisor Oleg Zaikin, Defense on September 27th, 2005, several visits between 2002 and 2005, Project Polonium.
- *Sana Hafdhi*, Multicriteria Supplier Selection: Criteria, Prevalent Methods and New Developments, University of Sfax (Supervisor Prof. A. Rebai), Tunisia, research visit in St Etienne, April – May 2015
- *Hidouri Moufida*, Hybrid supply chain risk management methods, University of Sfax (Supervisor Prof. A. Rebai), Tunisia, research visit in St Etienne, April – May 2015

MSC THESIS SUPERVISOR

One or two per year, since 1997, i.e. in total about 35 master theses.

THESIS EXAMINER

Dr. Habil. and Ph.D. Theses

Participated in about **180 defense committees**, in France, but also in Australia, Belgium, China, Canada, Finland, Italy, Tunisia, Poland, Spain, Romania, and Russia: 8 to 12 Ph.D. and 1 to 2 Dr. Habil. defenses per year (steady state since 2000, first committee in France was in 1993).

Master of Science Theses

as the Head of Master of Science and Doctoral Programs in Industrial Engineering in St Etienne, participate in all M. Sc. Committees (about 20 - 25 defenses per year)

DIRECTORSHIPS

Head of Department “Automation, Production and Computer Sciences”, IMT Atlantique, (110 Staff including 44 Faculty Members), since October 2015

Deputy Director of CNRS Lab. LIMOS - UMR 6158 (170 Staff including 94 Faculties, limos.isima.fr), Resp. of Division on Decision aid in Production Systems and Logistics, Mines St Etienne, 2012– 2015

Deputy Director for Research of Henri Fayol Institute, Mines St Etienne (99 Staff including 41 Faculty Members, fayol.mines-stetienne.fr), 2011– 2014

Head of Master of Science (25 students) & PhD program (20 Ph.D. candidates) in Industrial Engineering, Mines St Etienne, 2011– 2015

Director of the Centre for Industrial Engineering and Computer Sciences, Mines St Etienne (63 Staff including 29 Faculties), in January 2011, most of the centre activities and staff were integrated to the CNRS Lab. - LIMOS UMR 6158, 2003 – 2011

Head of the Department “Scientific Methods for Industrial Management” (Mines St Etienne, 16 Staff including 7 Faculties), in January 2011 the department was expanded and now it is a part of the new Henri Fayol Institute, 2003 – 2011

Head of the Graduate Program in Production Management, University of Technology of Troyes (www.utt.fr), 3-year graduate program for 375 students, 1996 – 2003

FUNDING: Over the course of my career I have procured funding for Research, PhD Programs, etc. of well over 14,000,000 euros

ADMINISTRATIVE SERVICES

- **Member** of the Committee for the Pritsker Doctoral Dissertation Award 2023 and 2024 in USA - <https://www.iise.org/Details.aspx?id=604>
- **Member** of the **Selection Committee** for projects on the Factory of the Future (ANR: National Agency of Scientific Research, funding the research in France, www.agence-nationale-recherche.fr)
- **Member of the Scientific Council** of the University of Technology of Troyes, France, since 2019
- **Member of the Scientific Council** of the program “Counseling for the Innovation and Development of SMEs”, Politecnico di Torino and Banca Cassa di Risparmio di Asti, Italy, since 2016
- **Member of Strategy Council** of Research Lab. LSIS UMR CNRS 7298 Aix-Marseille University, France, 2020
- **Member** of the International Scientific Board for evaluation of the Production Management department of the Politecnico Di Torino, Italy, 2018 – 2021
- **International Advisor** of the Master program in Smart Manufacturing at The Hong Kong Polytechnic University, Hong Kong, since 2023
- **Foreign Member** of the Scientific Committee of the Ph.D School in Mechatronics and Product Innovation Engineering of the University of Padua, Italy, since 2013
- Member on the **Research & Advisory Committee** of Symbiosis Institute of Operations Management (SIOM), India, since 2015
- **Member of Scientific Council** of Ecole des Mines d’Albi-Carmaux, France, 2014 – 2018
- **Member of Scientific and Pedagogical Council** of French Institute for Advanced Mechanics, Clermont-Ferrand, 2011 – 2015
- Member of Scientific Council of Lab. OCP/INRS, Paris, 2008 – 2012
- Member of Scientific Council of IE Lab., Ecole Centrale de Paris, 2008 – 2015
- Member of Board of St Etienne Doctoral School (ED SIS 488), 2005 – 2015
- *Member of Administrative Board of the University of Technology of Troyes*, 2001 – 2003
- *Member of Administrative Board of “Loire Numérique”* (a network of private IT enterprises of St Etienne), 2005 – 2011
- **Member of Administrative Board of the Research Cluster** on Production Systems, region Rhone-Alps, 2003 – 2008
- Leader of working group of the National Institute of Sciences and Technologies Mines-Telecom (IMT) for preparing the Program Factory of the Future (Industry 4.0), 2015 – 2008
- Co-coordinator of the Research Cluster on Production Systems and Logistics of the National Institute IMT, since 2018
- Delegate in the Board of the French RO society (ROADEF) representing the Region Champagnes-Ardennes, 1998 – 2003
- Member of committee for examination of new team proposals, Inria, 2017, 2018
- Member of Appointment Committee for a Full Professor position, Unimore, Italy, 2018
- Member of Executive Search Committee of the IUT of Roanne – University of St Etienne, in 2017
- Member of Executive Search Committee, University of Technology of Troyes, 1996 – 2003
- Member of Executive Search Committee of the INSA – Engineering School for Applied Sciences, in 2010
- Member of Executive Search Committee, University Paris 13, in 2009
- Member of Executive Search Committee of the Mines Nancy, in 2009
- Member of Executive Search Committee, ENIM – Mechanical Engineering School, Metz, 1997 – 2003
- *Member of the Commission for International Relations* of the French Mechanical Engineering Cluster “Viameca”, 2008 – 2015
- Member of ad hoc Councils and Boards (Scientific, Education, Security, Human Resources, ...) at Mines St Etienne (as the Director of a Research Centre and Department Head), 2003 – 2011
- Member of ad hoc Councils and Boards (Scientific, Education, Security, Human Resources, ...) at IMT Atlantique (as the Department Head), 2015 – present

EXPERT FOR

- **European Research Council (ERC)**, 2022 (<https://erc.europa.eu/>)
- ANR – French National Agency for Scientific Research (www.agence-nationale-recherche.fr)
- ANRT – French Association for Technological Research (www.anrt.asso.fr)
- AERES – French Evaluation Agency for Research and Higher Education (www.aeres-evaluation.com)
- HCERES - French High Council for Evaluation of Research and Higher Education (www.hceres.fr)
- **Canada Research Chairs (CRC) Program** (www.chairs-chaire.gc.ca)
- **Natural Sciences and Engineering Research Council of Canada** (www.nserc-crsng.gc.ca)
- Swiss National Science Foundation (SNSF - www.snf.ch)
- Israel Science Foundation (ISF - www.isf.org.il)

- Irish Research Council (www.research.ie, Ireland)
- EPFL (www.epfl.ch/index.en.html, Switzerland)
- Tel-Aviv University (www.eng.tau.ac.il, Israel)
- Technion (www.technion.ac.il, Israel)
- Purdue University (www.purdue.edu, USA)
- VirginiaTech (vt.edu, USA)
- University of Pittsburgh (www.pitt.edu, USA)
- Politecnico di Torino (www.polito.it, Italy)
- Politecnico di Milano (www.polimi.it/, Italy)
- University of Southern Denmark (www.sdu.dk, Denmark)
- Ivey Business School, Western University (www.ivey.uwo.ca, Canada)
- Queens University, Belfast (www.qub.ac.uk, UK)
- University of Angers (www.univ-angers.fr/en/, France)
- Inria, France (www.inria.fr, France)
- The French industrial cluster for advanced manufacturing technologies (www.pole-emc2.com, France)
- Champagne-Ardenne region government (www.cr-champagne-ardenne.fr, France)

RESEARCH INTERESTS

- Combinatorial Design of Products and Production Systems
- Optimal Design and Balancing of Machining and Assembly Lines
- Robust Approaches in Combinatorial Optimization
- Production Planning and Inventory Control under Uncertainties
- Lot-sizing and Scheduling with Uncertain Parameters
- Supply Chain Engineering and Optimization
- Ripple Effect, Disruption Analysis and Recovery Policies in Supply Chain Management

METHODOLOGY EMPLOYED

Exact Mathematical Methods and their Intelligent Coupling with Heuristics and Metaheuristics
 Discrete Optimization Methods (Mathematical Programming, Stochastic Algorithms)
 Performance Evaluation Methods (Markov's Models, Queueing Models)
 Control Theory and its Coupling with Discrete Optimization Algorithms
 Mathematical Programming Optimizers (Cplex, Xpress-MP, OSL)
 Discrete-Event Simulation (GPSS, SLAM, Witness, ARENA)
 PLM and Process Planning Software Tools (ERGOPlan, PLM Delmia)

SCIENTIFIC CONTRIBUTIONS AND IMPACT

- Numerous significant contributions to discrete optimization methods and their utilization for computer-aided design, production system planning and scheduling, and supply chain management. Major contributions to the theory of combinatorial design of manufacturing systems and logistics. Robust approaches.
- Serious contributions to the optimization under uncertainty and application to replenishments planning for assembly systems, production planning and scheduling taking into account the ripple effect, development of disruptions recovery algorithms in supply chain.
- Development of original mathematical programming methods oriented to specific real-life industrial problems and their intelligent coupling with heuristics and metaheuristics as well as with control theory algorithms.
- Advanced results in development of decomposition techniques, discrete optimization of stochastic systems, robust approaches, sensitivity (stability) analysis, and applied decision support tools for combinatorial optimization of stochastic systems.
- Successful and proven application of these engineering innovations in industry, consistently for over more than twenty years, including: (a) Software tools and CAD of tractor transmission systems, e.g., Minsk tractor works (MTW), Belarus; (b) Optimization of automotive machining lines, e.g., for PSA Peugeot Citroën, St Etienne, France; (c) Global supply chain planning for assembly systems by software scheduling optimization tools, e.g., for Renault, France; d) Workforce planning and optimization in assembly lines and reconfigurable manufacturing systems, e.g. for Mercedes Benz, Germany.

In particular, the contributions (with my team: Faculty members, post-docs, PhD students, and Guest Professors) with major methodological value and unique impact on the field are:

Innovative results for assembly line balancing problems

- ✓ Analysis of complexity, optimization of straight lines, U lines, two-sided assembly lines, bucket brigades; proof of existence of hard cases, generation of test instances and an original method for measurement of their complexity, proofs of bounds based on Set partitioning, development of Branch & Bound algorithms, Benders' decomposition approaches, problem oriented parametric decomposition techniques, graph theoretical approaches (constrained short path, and others), metaheuristics and matheuristics.
- ✓ Pioneering work on sensitivity analysis by stability radius of assembly line balancing, and on robust programming for line balancing under uncertainties. Advanced results in developing scenario based approaches.

Leading results in combinatorial design and management of disassembly systems

- ✓ Disassembly line balancing under uncertainty: two stage stochastic programs with fixed recourse and average approximation methods; second order cone programming and convex piecewise linear approximation; Lagrangian relaxation and mixed integer programming.

- ✓ Integrated optimization of the collection of End-of-Life products and their disassembly in reverse Supply Chain. New problems: Stochastic Multi-Vehicle Collection-Disassembly Problem, and Integrated Procurement-Disassembly Problem, and algorithms with two-stage stochastic programming approaches and metaheuristics. Advanced lot-sizing techniques for disassembly systems under uncertainty of demand, disassembly lead times and yields.

Discovering a new class of line balancing and equipment selection problems – the Transfer Line Balancing Problem (TLBP)

- ✓ In contrast with assembly line balancing where the tasks are executed sequentially, here the tasks can be executed in parallel by blocks, and task times are not known before optimization; they depend on task assignments. Most of properties known in literature are not valid here.
- ✓ For this new class of problems, we proposed proofs of their complexity, development of efficient optimization algorithms based on mixed integer programming, proofs of bounds and dominance properties, suggestion of efficient cuts and preprocessing procedures (total running times were reduced by up to 2000 times compared with previous models); problem specific dynamic programming, set partitioning and Branch & Bound techniques.
- ✓ We demonstrated the utility of these new models for various applications of straight lines, machines with rotary tables, machines with mobile tables, reconfigurable lines with CNC centers, and more.

Original results in scheduling theory and its applications

- ✓ Use of single machine models for track railway scheduling, new graphical approach for single machine scheduling, scheduling with precedence constraints and positionally dependent processing times, due-date assignment, job-shop scheduling via graph coloring, multi-product lot-sizing and scheduling on parallel machines, joint lot-sizing and scheduling under lead time and yield uncertainties; proofs of complexity; ILP models and FPTAS algorithms, metaheuristics for mono- and multi-objective applications; dynamic scheduling in Industry 4.0 by coupling control theory and combinatorial optimization approaches.

Proof of buffer allocation problem complexity, and aggregation methods, exact optimization and metaheuristic algorithms

- ✓ These problems had been extensively studied since the 1960s, but only recently our team proved that they are NP-hard.

Significant theoretical results in parameterization of Manufacturing Resources Planning (MRP)

- ✓ For assembly systems under lead-time uncertainties, special cases of these problems were reduced to Newsboy and Generalized Newsboy models, including proof of bounds and dominance properties, development of efficient Branch and Bound algorithms, development of metaheuristics for mono- and multi-objective cases, aimed at practical MRP implementations.

Innovative results in risk analysis, ripple effect and management of supply chain under uncertainty

- ✓ New framework for management of supply chain under ripple effect risks, analysis of ripple effect, resilience issues, advanced optimization algorithms for disruption recovery and adaptive planning and scheduling based on coupling control theory with robust approaches in combinatorial optimization.

Prolific research activities have focused on the entire engineering cycle, from product design to production system and supply chain optimization. Our research, education, and scholarly philosophy consists of continuously searching for new problems for which application of operational research, control theory and advanced industrial engineering techniques can improve dramatically the system performance. For each new problem, we begin with theoretical study (complexity, properties, bounds, etc.). We follow by developing problem-oriented exact optimization techniques. The algorithms are complemented with metaheuristics to be able to treat large-scale practical problems (often by using metaheuristic approaches). While his initial models are often deterministic, the next step addresses stochastic aspects and cases, development of robust optimization models and sensitivity (stability) analysis, and multi-criteria analysis. After validation, the last step is the development of applied decision support software tools which include these models and algorithms. This entire cycle with teams of students is accompanied by major industry partners that support the problem definition, methodological development and validation, and finally implementation

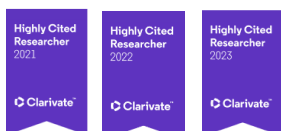
PUBLICATIONS

More than **900 publications** including:

5 authored and **26** edited Books, **35** Chapters of Books, **4** Prefaces of Books, **284** Papers in refereed international journals, **34** Editorials in international journals, **24** Papers in refereed national journals, over **450** Papers in refereed conference proceedings, etc.

LISTED IN:

Marquis Who's Who in the World;
 Marquis Who's Who in America;
 Marquis Who's Who in Sciences and Engineering;
 Marquis Who's Who in the World Russian version; =
 "Têtes", Pays de la Loire, France ;
 Science in Republic of Belarus in XX Century.



REFERENCES

Provided upon request

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