

CURRICULUM VITAE

(Photo in September 2015 at the Chinese Academy of Sciences)

Alexandre Dolgui

Distinguished Professor
(Full Professor of Exceptional Class in France)
Head of Automation, Production and Computer Sciences Department

IMT Atlantique
La Chantrerie, 4, rue Alfred Kastler - B.P. 20722
F-44307 Nantes Cedex 3, France
E-mails: alexandre.dolgui@imt-atlantique.fr
URL: www.emse.fr/~dolgui



PROFESSIONAL EXPERIENCE

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

2015 – present, Full Professor of Exceptional Class, Head of Department on Automation, Production and Computer Sciences, Member of the Executive Committee of the LS2N - CNRS UMR 6004

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 the Industrial Management team.

University of Technology 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

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

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

RECENT AWARDS

- 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 and Computer Science)
- 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 of the European Academy for Industrial Management (AIM), 2013 – present

Chair of the IFAC Technical Committee TC 5.2 "Manufacturing Modelling for Management and Control", 2011 – present

Member of the Board of the International Foundation for Production Research (IFPR), 2005 – present

Chaired of Working Group "Reconfigurable Manufacturing Systems", IFAC TC 5.2, 2011 – 2015

Chaired Working Group "Supply Network Engineering", IFAC TC 5.2, 2005 – 2011

Chaired Working Group "Design and Control of Flexible and Reconfigurable Manufacturing Systems", IFAC TC 5.1, 2002 – 2011

Member:

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

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

Society of Collaborative Networks (SoCoNet), 2006 – present

IIE, 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 – present

Area Editor of Computers & Industrial Engineering (Elsevier), 2010 – present

Associate Editor of Journal Européen des Systèmes Automatisés (Hermès Science), 2007– present

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

Presently *Editorial Board Member* for 23 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 Simulation and Process Modelling (InderScience), since 2005
Int. J. of Engineering Management and Economics (InderScience), since 2007
Journal of Decision Systems (Hermès Science), since 2009
Journal of Mathematical Modelling and Algorithms (Springer), since 2001
Journal of Operations and Logistics (i4e2), since 2007
Journal of Industrial Engineering (Hindawi), since 2012
Management and Production Engineering Review (Polish Academy of Sciences), since 2011
Journal of Algorithms and Optimization (World Academic Publishing), since 2013
Production & Manufacturing Research (Taylor & Francis), since 2013
The Scientific World Journal (Hindawi), since 2013
Proceedings of SPIE of Russian Academy of Sciences, since 2014
Mathematical Problems in Engineering (Hindawi), since 2014
Journal of Civil Engineering and Management (Taylor & Francis), since 2014
Technological and Economic Development of Economy (Taylor & Francis), since 2014
Decision Making in Manufacturing and Service (AGH University, Poland), since 2015
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
Journal on Transport and Logistics, since 2015 (<http://logi.upce.cz/home.html>)
IFAC-PapersOnLine, since 2011 (<http://www.journals.elsevier.com/ifac-papersonline>)

PROFESSIONAL SERVICES AND HONORS

Member of Scientific/Program Committee for **more than 190 International Conferences**, for example: INCOM'2018 (IFAC), CIGI'2017, ICPR'2017, TAORS'2017, CoDIT'2017 (IEEE), CSAE'2017, ICINCO'2017, ICORES'2017, ICMDSM'2017, RIPE'2017, 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 (IFPR), 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 20th IFAC WC, 2017 (Toulouse, France), 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/IFIP/IFORS/IEEE Symposium INCOM'06 in St Etienne, France (www.emse.fr/incom06): **783 attendees** (544 academics, 239 industrial representatives, 57 countries, 16 special issues of international journals)

Chairman of:

- *International Program Committee* for the 9th IFAC/IEEE/IFIP/IFORS/IEE/INFORMS/SCS triennial conference MIM'19, Berlin, Germany
- *Steering Committee* for the 8th IFAC/IEEE/IFIP/IFORS/IEE/INFORMS/SCS triennial conference MIM'16, Troyes, France: 540 participants from 52 countries
- *International Program Committee* for the 15th IFAC/IFIP/IFORS/IEEE triennial symposium INCOM'2015, Ottawa, Canada: 483 participants from 53 countries
- *International Program Committee* for the 7th IFAC/IFIP/IFORS Conference MIM'13 in St Petersburg, Russia: 455 participants from 54 countries

- *International Program Committee* for the 14th IFAC/IFIP/IFORS Symposium INCOM'12 in Bucharest, Rumania: 463 participants from 47 countries
- *International Program Committee* for the 13th IFAC/IFIP/IFORS Symposium INCOM'09 in Moscow, Russia: 654 participants from 55 countries
- *Organizing Committee* for 3rd French Speaking International Conference MOSIM'01 (Troyes), France: 306 participants from 26 countries
- *International Program Committee* of SCM'02 (Szczecin, Poland) and MOSIM'04 (Nantes, France)

Chair of Scientific Committee for IESM'2017 (Industrial Engineering and Systems Management), Saarbrucken, Germany

Co-Chair of the 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

Co-Chair of the Annual meeting on Production Systems of the GDR MACS of CNRS: 215 participants.

Co-Chair of the workshop on "Theory and Applications of Operations Research for Sustainability" at the Global Cleaner Production & Sustainable Consumption Conference, 1 - 4 November 2015, Sitges, Barcelona, Spain

Co-Chair (with R. Ruiz) of *Scientific Committee* for IESM'2015, Spain and *Co-Chair of Scientific Committee* (with N. Brauner and F. Yalaoui) of ROADEF'2015, France

Co-Chair (with Gilbert Laporte) of *International Program Committee* for of *Scientific Committee* for IESM'2013, Morocco and *Technical Program Co-Chairs* for IEEE CoDIT'13, Tunisia

Permanent Member of Steering Committee for the International Conference MOSIM, since 2001

Vice-Chairman of Scientific Committee for the International Conference 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.

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-gospfi.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

INFORMS Fellow reference, www.informs.org, 2015

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

Guest Editor of 21 special issues of scholarly journals: IJPR (2), IJPE(3), EJOR, Omega, JIM (2), J Math Mod Alg in OR (4), IFAC Ann Rev Contr. (2), J Eur Aut Syst, J Dec Sys (2), Int J of Simul & Proc Mod, Int J Supply Chain Mgmt and IEEE TII

Editor of 11 International Conference Proceedings: NITE'96, MOSIM'01, SCM'02, MOSIM'04, INCOM'2006, INCOM'2009, ROADEF'2011, INCOM'2012, MIM'2013, INCOM'2015, and MIM'2016

Invited Session Organizer for: MCPL'2000 (IFAC), MOSIM'04, MOSIM'06, INCOM'06 (IFAC), MCPL'2007 (IFAC), LT'07(IEEE), IMS'2008 (IFAC), CIE39, INCOM'09 (IFAC), MOSIM'09, EURO'10, INCOM'12 (IFAC), APMS'12 (IFIP), META'12, EURO-INFORMS'13, IESM'13 (IEEE), MIM'13 (IFAC), IFORS'14, 15th IFAC WC, 16th IFAC WC, 17th IFAC WC, 18th IFAC WC, and 19th IFAC WC, INCOM'2015 (IFAC), MIM'2016 (IFAC), EURO'2016, ICPR-24 (IFPR), etc.

Track (stream) co-chair for: 18th IFAC WC, 19th IFAC WC, 20th IFAC WC, INCOM'06 (IFAC), INCOM'09 (IFAC), INCOM'12 (IFAC), INCOM'2015 (IFAC), MIM'2013 (IFAC), MIM'2016 (IFAC), ROADEF'2014, EURO'2015

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

Keynote **plenary talks**: ACS'97, MCPL'2007 (IFAC), LT'07 (IEEE), INCOM'09 (IFAC), ICIEM'12, ICINCO'12 (IFAC), ICPR-22 (IFPR), COSI'2013, ROIS'2013 (IEEE), MIM'2013 (IFAC), CSM'2013, YAEM'2014 (IIE), ICIEOM'2014 (IIE), ICIEOM'2015 (IIE), Shaastrarth'2015, ISARCRM'2015 (IEEE), Workshop on 60th anniversary of SALBP'2015, ICORES'2016 (INSTICC)

TEACHING EXPERIENCE

34 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 graduate), 2016 – present

Ecole Nationale Supérieure des Mines de Saint-Etienne, France

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

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

Inventory Control (undergraduate and graduate), 2003 – 2008

Ecole Centrale de Lyon, France

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

Università degli Studi di Modena e Reggio Emilia, Italy

Optimal Design of Production Lines (undergraduate and 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, Troyes, France

Optimal Design of Production Systems, Discrete-Event Simulation, Operations Research, Production Management Software Tools, (undergraduate, 1996–2003)

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

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

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

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

Ecole Nationale Supérieure des Mines de 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, 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, France, in 1996;
Headed this program from 1996 to 2003

Created 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 at the Ecole Nationale Supérieure des Mines de Saint-Etienne (with Prof. Xiaolan Xie in 2007).
Currently, *Head* of the latter as well as Head of a **PhD program** in Industrial Engineering.

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

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

RECENT RESEARCH PROJECTS

Contracts with Industrial Partners:

- Optimization of the Global Supply Chain in Automotive Industry, for Renault group, 2013 – 2016

- Warehouse Design, Localization and Optimization, for Casino group, 2013 – 2014

- Design, Balancing and Optimization of Machining Lines, for PCI-SCEMM, a division of PSA Peugeot Citroën, 2005 – present

- Simulation and Optimization of Disassembly Workshops, for CEA (French Commissariat for Atomic Energy), 2003

- Simulation and Optimization of Production Lines, for:

Philips (Troyes), 1999

Meritor (St Dizier), 2000

AT SA (Troyes), 2001

Leader of a Team for European Projects (funded by the European Commission):

- 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.)

- COLlaborative DEMand and Supply NETworks (CODESNET - FP 6), 2004 – 2007

- Scheduling for Modern Manufacturing, Logistics and Supply Chains (INTAS), 2004 – 2007

- Scheduling and assignment models under uncertainty and real-time constraints for manufacturing, communication, computer-aided design and transportation (INTAS), 2001 – 2004

- Discrete Optimization Problems in Scheduling and Computer-aided Design (INTAS), 1997 – 2000

- Integrated Manufacturing Conception Process: Methodology and real life applications (INTAS), 1997 - 2000

Project Manager for Projects Funded by Regional Governments:

- Reconfigurable Manufacturing Systems and Transformable Factories, Rhone-Alps, 2006 – 2009

- Optimal Planning of Assembly System under Uncertainties, Champagne-Ardenne, 1996 – 1999

- Assembly Line Design and Balancing, Champagne-Ardenne, 2000 – 2003

Leader of a team in Projects Funded by Regional Governments (Region Rhone-Alps):

- EuroLean (2009 – 2011) and Copilote (2003 – 2005)

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

- Simulation and Optimization of Supply Chains, French and Polish Governments, 2003 – 2005

Leader of project PICS 6064 (French National Council for Scientific Research – CNRS):

- Design and Optimization of Reconfigurable Production Lines, France – Belarus, 2012 – 2015

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

Participating Expert in the French National 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

Participating in the following recent projects:

- HOST – Hospital: Simulation and Optimization (ANR, Program TecSan), 2011 – 2014

- Design and Balancing Disassembly Lines (CNRS, GDR RO), 2012 – 2014

Participating in the following projects:

- Decision aid for assembly/disassembly line design under uncertainty, Pays de la Loire, 2016 – 2017

- ATHENA – Scheduling under Uncertainties (National Agency for Scientific Research - ANR), 2013 – 2017

- SCRIPT – Robust Design and Service Quality Indicators of Railway Transport (National 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, Ecole des 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, project granted by Regional Governments (Region Rhone-Alps), 2013 – 2015

- Combinatorial optimization in disassembly lines and reverse logistics, project granted by Gdr RO (National network in Operations Research), 2012 – 2013

- Collaboration and Information control in Supply Chains, project Funded by Regional Governments (Region Rhone-Alps), 2002 – 2005

DR HABIL THESIS UNDER SUPERVISION

- *Xavier Delorme*, Mathematical Modelling for Evaluation and Optimization of Complex Industrial Systems, Ecole des Mines de St Etienne, Defense on October 23, 2014
- *Olga Battaïa*, Combinatorial Optimization for Configuration of Production Lines, Ecole des Mines de St Etienne, Defense on October 21, 2014

POST-DOC SUPERVISOR

- *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

PHD THESIS SUPERVISOR

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

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

- *Muhammad Khoirul Khakim Habibi*, *Integrated Optimization of End-of-Life Items Collection and Their Disassembly in Reverse Supply Chains*, Ecole des Mines de Saint-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*, Ecole des Mines de St Etienne, Co-supervisors: Xavier Delorme (Mines St Etienne), Mikhail Kovalyov (Academy of Sciences of Belarus), Thesis 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 4, 2015
- *Lounes Bentaha*, *Combinatorial Design of Disassembly Lines Under Uncertainties*, Ecole des Mines de Saint-Etienne (France) and University of Michigan (United States), Co-supervisor: Jack Hu (Michigan), Thesis Defense on October 16, 2014
- *Oussama Ben Ammar*, *Supply Planning for Multi-Level Assembly Systems Under Uncertainties*, Ecole des Mines de Saint-Etienne, Thesis Defense on October 9, 2014
- *Fatme Makssoud*, *Optimal Reconfiguration of Machining Transfer Lines*, Ecole des Mines de Saint-Etienne, Thesis Defense on 20 May 2014
- *Sergey Kovalev*, *Combinatorial Design of Production Lines: Analyze of Complexity and Optimization*, Ecole des Mines de St Etienne, Thesis Defense on November 23th, 2012
- *Evgeny Gurevsky*, *Design of Production Lines Under Uncertainties: Sensitivity Analyze and Robust Approaches*, Ecole des Mines de St Etienne, Thesis Defense on December 13th, 2011
- *Kseniya Schemeleva*, *Lotsizing and Sequencing of Production Lines Under Uncertainties*, Ecole des Mines de St Etienne, Thesis Defense on December 13th, 2010

- *Mohamed Essafi*, Design and Optimization of Reconfigurable Manufacturing Lines, Ecole des Mines de St Etienne, Thesis Defense on December 8th, 2010
- *Aysegul Sarac*, Modeling and Decision Support when RFID is Introduced in Supply Chains, Ecole des Mines de 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, Ecole des Mines de St Etienne, Thesis Defense on December 8th, 2008
- *Thanh Trung Van*, Personalized Search in Scientific Digital Libraries, co-supervisor: M. Beigbeder, Thesis Defense on October 4th, 2008
- *Olga Guschinskaya*, Decision Support Tool for Preliminary Design of Mass Production Machining Lines with Multi-Spindle Heads, Ecole des Mines de St Etienne, Thesis Defense on November 27th, 2007 (**2007 Best PhD Award by the CNRS GDR MACS**)
- *Mehdi Lamiri*, Operating Room Planning Under Uncertainties, Ecole des Mines de St Etienne, co-supervisor: X. Xie, Thesis Defense on October 4th, 2007
- *Sana Belmokhtar*, Modular Machining Lines: Modeling, Configuration and Optimization, Ecole des Mines de St Etienne, Thesis Defense on 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 Methodes, 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, Thesis Defense on December 18th, 2001, **Best Paper Award** at the MOSIM 2001 conference (www.utt.fr/mosim01)

ONGOING PHD THESES

- *Christian Serrano*, Optimization of Renault Global Supply Chain, Ecole des Mines de Saint-Etienne, Thesis Defense Planned in 2017
- *Alexandr Pirogov*, Robust Optimization of Production Lines with Parallel and Sequential Execution of Tasks, IMT Atlantique – University of Nantes, Thesis Defense Planned in 2019

INTERNATIONAL PHD EXCHANGES

Participations in supervision of 10 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:

- *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
- *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 Planned 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 Planned in 2015
- *Viatcheslav Sigaev*, Discrete Optimization Methods for Buffer Allocation in Unreliable Production Lines, *Omsk State University*, Russia (supervisors: Anton Ereemeev and Alexander Kolokolov), several visits between 2004 and 2007, common work on papers, Defense in 2014

- *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.

MSC THESIS SUPERVISOR

One or two per year, since 1997, i.e. in total about 25 theses.

THESIS EXAMINER

Dr. Habil. and Ph.D. Theses

Participated in about **170 defense committees**, in France, Spain, Belgium, Italy, China, Canada, Romania, Tunisia, Finland and Poland: 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

Presently:

Head of Department “Automation, Production and Computer Sciences”, Ecole des Mines de Nantes (106 Staff including 44 Faculty Members)

Previously:

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

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

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

Director of the Centre for Industrial Engineering and Computer Sciences, Ecole des Mines de 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” (Ecole des Mines de 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, Scientific Conferences, etc. of well over 5,000,000 euros

ADMINISTRATIVE SERVICES

- **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

- **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
- Expert Member on the **Research & Advisory Committee** of Symbiosis Institute of Operations Management (SIOM), Nashik, India, since 2015
- **Member of Scientific Council** of Ecole des Mines d'Albi-Carmaux, France, 2014 – present
- **Member of Scientific and Pedagogical Council** of French Institute for Advanced Mechanics, Clermont-Ferrand, 2011 – present
- Member of Scientific Council of Lab. OCP/INRS, Paris, 2008 – 2012
- Member of Scientific Council of IE Lab., Ecole Centrale de Paris, 2008 – present
- Member of Board of St Etienne Doctoral School (ED SIS 488), 2005 – present
- *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 for preparing the Program Factory of the Future (Industry 4.0)
- Delegate in the Board of the French RO society (ROADEF) representing the Region Champagnes-Ardennes, 1998 – 2003
- Member of Executive Search Committee, University of Technology of Troyes, 1996 – 2003
- Member of Executive Search Committee, ENIM – Mechanical Engineering School, Metz, 1997 – 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 Ecole Nationale Supérieure des Mines de Nancy, in 2009
- Member of ad hoc Councils and Boards (Scientific, Education, Security, Human Resources,...) at the Ecole Nationale Supérieure des Mines de St Etienne (as the Director of a Research Centre and Department Head), 2003 – 2011
- *Member of the Commission for International Relations* of the French Mechanical Engineering Research Cluster "Viameca", 2008 – present

EXPERT FOR

- 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)
- **Canada Research Chairs (CRC) Program** (www.chairs-chaires.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)
- **Purdue University** (<http://www.purdue.edu>, USA)
- **University of Pittsburgh** (<http://www.pitt.edu>, USA)
- **Politecnico di Torino** (<http://www.polito.it>, Italy)
- **University of Southern Denmark** (<http://www.sdu.dk>, Denmark)
- Champagne-Ardenne region government (France)

RESEARCH INTERESTS

Combinatorial Design of Products and Production Systems
 Optimal Design and Balancing of Machining and Assembly Lines
 Production Planning and Inventory Control under Uncertainties
 Lot-sizing and Scheduling with Uncertain Parameters
 Supply Chain Engineering and Optimization

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)
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.
- Development of original mathematical programming methods oriented to specific real-life industrial problems and their intelligent coupling with heuristics and metaheuristics.
- 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 fifteen years, including: (a) Software tools and CAD of tractor transmission systems, e.g., Minsk tractor plant, 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, Paris, France.

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**
 - o 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.
 - o Pioneering work on sensitivity analysis by stability radius of assembly line balancing, and on robust programming for line balancing under uncertainties.
- **Discovering a new class of line balancing and equipment selection problems – the Transfer Line Balancing Problem (TLBP)**
 - o 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.
 - o 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.
 - o 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**
 - o 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.
- **Proof of complexity of buffer allocation problems, and development aggregation methods, exact optimization and metaheuristic algorithms**
 - o 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)**
 - o 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.

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 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 matheuristic 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 **770 publications** including:

5 books authored, **16** books edited, 28 chapters of books, **169 papers in refereed international journals**, **23** editorials in international journals, **23** papers in refereed national journals, more than 380 papers in refereed conference proceedings, etc.

LISTED IN

Marquis Who's Who in the World, since 2000

Marquis Who's Who in America

Marquis Who's Who in Sciences and Engineering

Marquis Who's Who in the World (Russian version)

Science in Republic of Belarus in XX Century

"Têtes", Pays de la Loire, France

REFERENCES

Provided upon request

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