Dr. Georgios Georgiadis

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Research Interests

His main research interests are in the areas of mathematical optimization, production planning/scheduling and operations research. More specifically, his research focuses on the development of mathematical models for solving industrial optimization problems, mainly concerning the optimal production planning of industrial plants and the optimal design and operation of the corresponding supply chains.

Experience

2025 – Present **Department of Mechanical Engineering - Aristotle University of Thessaloniki**
Assistant Professor
Courses: Operational Research II, Production Scheduling and Control, Forecasting Methods

2021 – Present **Intelligen Inc.**
Reserach and Development Associate
Development of optimization methods and their integration into commercial production planning software SchedulePro.
Development of industrial scheduling and production planning applications and services .
Application of production planning solutions to industrial problems..
Established cooperation with many international industries (Lonza, Hovione, Novartis etc.).

2022 – 2025 **Department of Chemical Engineering - Aristotle University of Thessaloniki**
Postdoctoral Researcher
Research projects' management. Writing of research proposals. Established cooperation with the Greek (MEVGAL, VERGINA, VITOM, KONVA, OROSIMO, PAL, ISOMAT, SEMANTIC etc.) and the European (P&G, Frinsa del Noroeste) Industry. Co-supervision of Marialena Samouilidou's PhD thesis and numerous diploma theses.

2017 – 2020 **Centre for Research and Technology Hellas**
Doctoral Researcher
Management of European Project "Improved energy and resource efficiency by better coordination of production in the process industries" (CoPro) under the Horizon2020 framework.
Preparation of deliverables and reports on the programme results. Presentation of research results at scientific conferences, workshops and project meetings. Continuous cooperation with industrial, research and academic partners from various European countries.

Education

2017 – 2021 **Department of Chemical Engineering - Aristotle University of Thessaloniki**
Doctoral Thesis: **"Optimal Production Planning and Scheduling of Mixed Batch and Continuous Industrial Processes"**
Grade: Excellent with Distinction
Supervising Professor: Prof. Michael Georgiadis

2014 – 2017 **Rheinisch Westfaelische Technische Hochschule (RWTH) Aachen** – Germany
Electrical Power Engineering MSc.
Diploma Thesis: "Adaptive Droop Control for Multiterminal MVDC Grids".
Grade: 1.4 (German scoring system).

2007 – 2013 **Department of Electrical and Computer Engineering - Aristotle University of Thessaloniki**
Electrical and Computer Engineering Diploma
Diploma Thesis: "Yaw control of small-scale wind turbines" *Grade: 7.88.*

Research projects

2022-2023 **Development of a Software for the Optimization of Production Scheduling in Manufacturing Industries (KMP6-0077560)**
Funding: Region of Central Macedonia, Innovation research funds.

2020-2021 **Techniques for Optimizing Production Scheduling in Manufacturing Industries of Process Systems (MIS: 5047892)**
Funding: European Social Fund, Support for researchers with a focus on young researchers - Cycle B.

2017-2020 **Improved Energy and resource efficiency be better coordination of production in the process industries(CoPro). Grant agreement ID: 723575**
Funding: Horizon 2020 research and innovation program.

Scholarships

2024-2025 Research Fellowship for Postdoctoral Researchers
Research Committee of ELKE AUTH.

Awards

2024 "Keep Going" Innovation Award
IFS Awards - One Stop Laison Office
Challenge Owner: ISOMAT
Challenge: "Energy mix management to reduce the company's carbon footprint"

Publications in peer-reviewed scientific journals

2026 **Neural network-assisted optimisation of production rescheduling under incomplete data**
Maria E. Samouilidou, Nikolaos Passalis, Georgios P. Georgiadis, Michael C. Georgiadis
International Journal of Production Research.

2025 **A hybrid ML-MILP framework for the optimal integration of photovoltaic and battery systems in manufacturing industries**
Georgios P. Georgiadis, Christos N. Dimitriadis, Nikolaos Passalis , Michael C. Georgiadis
Computers and Chemical Engineering, 203, 109356.

2025 **Decarbonizing the Industry Sector: Current Status and Future Opportunities of Energy-Aware Production Scheduling**
Georgios P. Georgiadis, Christos N. Dimitriadis, Michael C. Georgiadis.
Processes, 13(6), 1941.

2025 **Enhancing industrial scheduling through machine learning: A synergistic approach with predictive modeling and clustering**
Maria E. Samouilidou, Nikolaos Passalis, Georgios P. Georgiadis, Michael C. Georgiadis.
Computers and Chemical Engineering, 200, 109174.

2024 **A multi-bucket time representation framework for optimal scheduling in beverage production facilities**
Maria E. Samouilidou, Georgios P. Georgiadis, Michael C. Georgiadis.
Computers and Chemical Engineering, 183, 108611.

2023 **Food Production Scheduling: A Thorough Comparative Study Between Optimization and Rule-Based Approaches**
Maria E. Samouilidou, Georgios P. Georgiadis, Michael C. Georgiadis.
Processes, 11, 1950.

2023 **An exact algorithm for calculating the minimum and feasible ranges of cycle time in periodic scheduling with shared resources**
Alexandros Koulouris, Georgios P. Georgiadis.
Computers and Chemical Engineering, 175, 108286.

2021 **Optimal Planning of the COVID-19 Vaccine Supply Chain**
Georgios P. Georgiadis and Michael C. Georgiadis.
Vaccine, 39 (37), 5302-5312.

2021 **Optimal Production Planning and Scheduling in Breweries**
Georgios P. Georgiadis, Apostolos P. Elekidis and Michael C. Georgiadis.
Food and Bioproducts Processing, 125, 201-221.

2020 **Optimal production scheduling of food process industries**
Georgios P. Georgiadis, Borja Mariño Pampín, Daniel Adrián Cabo and Michael C. Georgiadis.
Computers and Chemical Engineering, 134, 106682.

2019 **Optimization-based scheduling for the process industries: from theory to real-life industrial applications**
Georgios P. Georgiadis, Apostolos P. Elekidis and Michael C. Georgiadis.
Processes, 7, 438.

2019 **Optimal Production Scheduling in the Dairy Industries**
Georgios P. Georgiadis, Georgios M. Kopanos, Antonis Karkaris, Harris Ksafopoulos and Michael C. Georgiadis.
Industrial and Engineering Chemistry Research, 58, 6527-6550.

Conference proceedings

2024 **A MILP Model for the Minimization of Cycle Time in Periodic Production Scheduling using Flexible Operation Shifts**
Georgios P. Georgiadis, Alexandros Koulouris
Computer-Aided Chemical Engineering, 53, 1651-1656.

2023 **Lot-Sizing and Production Scheduling of a Beverage Industry**
Maria E. Samouilidou, Eleonora Diakoumi, Georgios P. Georgiadis, Antonios Dikaiakos, Michael C. Georgiadis.
Computer-Aided Chemical Engineering, 52, 95-100.

2023 **On the minimization of cycle time in periodic periodic scheduling**
Alexandros Koulouris, Georgios P. Georgiadis.
Computer-Aided Chemical Engineering, 52, 1007-112.

2019 **Optimal Scheduling and Operation of a Food Industrial Plant.**
Georgios P. Georgiadis, Chrysovalantou Ziogou, Borja Marino Pampin, Daniel Adrian Cabo, Miguel Lopez, Carlos G. Palacin, Cesar de Prada, Carlos Vilas, A. A. Alonso and M. C. Georgiadis.
12th European Congress of Chemical Engineering, ECCE12.

2019 **On the Optimization of Production Scheduling in industrial food Processing Facilities**
Georgios P. Georgiadis, Chrysovalantou Ziogou, Georgios Kopanos, Marino Pampin, Daniel Cabo, Miguel Lopez, Michael C. Georgiadis.
Computer-Aided Chemical Engineering, 46, 793-798.

2018 **Production Scheduling of Multi-Stage, Multiproduct Food Process Industries**
Georgios P. Georgiadis, Chrysovalantou Ziogou, Georgios Kopanos, Manuel Garcia, Daniel Cabo, Miguel Lopez, Michael C. Georgiadis.
Computer-Aided Chemical Engineering, 43, 1075-1080.

Academic Book Authorship

2022 **Optimal production scheduling in process industries**
Michael C. Georgiadis, Elekidis Apostolos, Georgiadis Georgios
ISBN: 978-960-418-970-0

Participation in international and national scientific conferences

2024 **A MILP Model for the Minimization of Cycle Time in Periodic Production Scheduling using Flexible Operation Shifts**
34th European Symposium on Computer-Aided Process Engineering, 02/06-06/06 2024, Florence

2023 **A multi-bucket time representation framework for optimal scheduling in beverage production facilities**
33rd European Symposium on Computer-Aided Process Engineering, 18/06-21/06 2023, Athens

2023 **On the Optimization of Production Scheduling in Industrial Food Processing Facilities**
33rd European Symposium on Computer-Aided Process Engineering, 18/06-21/06 2023, Athens

2019 **Optimal Scheduling and Operation of a Food Industrial Plant**
12th European Congress of Chemical Engineering, 15/09-19/09 2019, Florence

2019 **On the optimization of production scheduling in industrial food processing facilities**
29th European Symposium on Computer-Aided Process Engineering, 16/06-19/06 2019, Eindhoven

2019 **Optimal production scheduling in food industries**
12th Panhellenic Conference of Chemical Engineering, 29/05-31/05 2019, Athens

2018 **Production scheduling of multi-stage, multi-product food process industries**
28th European Symposium on Computer-Aided Process Engineering, 10/06-13/06 2018, Graz

Teaching experience

2025 - Present **Department of Mechanical Engineering - AUTH**
Supply Chain Management
Operational Research I
Operational Research II
Production Planning and Control
Forecasting Methods

2018 - 2020 **Co-supervision of the course ”Advanced Methods of Process Design, Synthesis and Optimization” - Department of Chemical Engineering AUTH**
Lectures on the use of optimization software GAMS. Development and grading of exercises and exam topics. Supervision of teams for the successful implementation of laboratory exercises.

Supervision of diploma theses and PhD dissertations

2017 – Present

Member of two (2) doctoral advisory committees Member of one (1) doctoral examination committee

Co-supervision of two (2) doctoral candidate and ten (13) diploma theses (11 completed). 4 students who completed their thesis under the supervision of Dr. Georgios Georgiadis continued their academic career at the doctoral level.

Completed co-supervised PhD thesis:

Maria E. Samouilidou, Optimization Techniques for Production Scheduling in Flexible Industrial Processes

Indicative diploma theses:

Georgios Bounitsis, *Optimization of production scheduling in consumer goods industries*

Christos Dimitriadis, *Optimization of production scheduling in a large-scale canned fish industry*

Reviewer of scientific articles

2021 – Present

Active reviewer in numerous scientific journals e.g. Chemical Engineering Research and Design, Applied Energy, Computers & Chemical Engineering, Operation Research Forum etc.

Technical skills

Programming languages C#, C++, .NET, Python

Software tools GAMS, Matlab, Simulink, SchedulePro

Languages English (C2), German (C1)