

# Laurent ALFANDARI

Professeur

Département: Systèmes d'information, sciences de la décision et statistiques  
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France

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Pays d'origine: France

## INTERETS DE RECHERCHE

Recherche opérationnelle, Optimisation combinatoire, Programmation mathématique, Sciences de

## FORMATION

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|------|---|
| 1999 | Doctorat en Recherche Opérationnelle, Université Paris-Dauphine, PSL, France        |
| 1995 | Master of Research, Sciences du Management, Université Paris-Dauphine, PSL, France  |
| 1993 | M.Sc in Management (Grande Ecole program), ESSEC Business School, France            |
| 1990 | Licence - Mathématiques & Sciences Sociales, Université Paris-Dauphine, PSL, France |

## EXPERIENCE PROFESSIONNELLE

### Positions académiques principales

- |                |   |
|----------------|---|
| 2010 - Présent | Professeur, ESSEC Business School, France           |
| 2007 - 2010    | Professeur associé, ESSEC Business School, France   |
| 2000 - 2007    | Professeur assistant, ESSEC Business School, France |

### Autres affiliations académiques

- |                |   |
|----------------|---|
| 2019 - 2023    | CO-Responsable DU MASTER IN DATA SCIENCES AND BUSINESS ANALYTICS, ESSEC Business School, France |
| 2018 - 2021    | Responsable de filière PHD Opération & Data Analytics, ESSEC Business School, France            |
| 2013 - Présent | Responsable de filière business analytics methods, ESSEC Business School, France                |
| 2012 - 2014    | Responsable de département, ESSEC Business School, France                                       |
| 2009 - 2011    | Directeur académique / Responsable académique, ESSEC Business School, France                    |
| 2002 - Présent | Membre du LIPN, Sorbonne Université, France   |
| 1995 - 2002    | Membre du Laboratoire LAMSADE, Université Paris-Dauphine, PSL, France                           |

## Autres expériences professionnelles

1993 - 1993	Conseil en Urbanisme et Développement de Commerce Spécialisés, PROCOS, France
1992 - 1992	Contrôleur de Gestion, Hachette, France
1992 - Présent	Auditeur interne, TOTAL, France
1991 - 1991	Marketing, Hachette, France

## BOURSES, PRIX ET DISTINCTIONS

### Prix et Distinctions

2020	Teaching Awards ESSEC Top 4 Permanent Professors, ESSEC Business School, France
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## PUBLICATIONS

### Articles

BISWAS, D., ALFANDARI, L. et ARCHETTI, C. (2024). A Triple Bottom Line optimization model for assignment and routing of on-demand home services. *Computers & Operations Research*, 167, pp. 106644.

DELLE DONNE, D., ARCHETTI, C., ALFANDARI, L. et LJUBIC, I. (2023). Freight-on-Transit for urban last-mile deliveries: A strategic planning approach. *Transportation Research Part B: Methodological*, 169, pp. 53-81.

ALFANDARI, L., LJUBIC, I. et DE MELO DA SILVA, M. (2022). A tailored Benders decomposition approach for last-mile delivery with autonomous robots. *European Journal of Operational Research*, 299(2), pp. 510-525.

BISWAS, D. et ALFANDARI, L. (2022). Designing an optimal sequence of nonpharmaceutical interventions for controlling COVID-19. *European Journal of Operational Research*, 303(3), pp. 1372-1391.

ALFANDARI, L., HASSANZADEH, A. et LJUBIC, I. (2021). An Exact Method for Assortment Optimization under the Nested Logit Model. *European Journal of Operational Research*, 291(3), pp. 830-845.

FURINI, F., LJUBIC, I., SAN SEGUNDO, P. et ZHAO, Y. (2021). A branch-and-cut algorithm for the Edge Interdiction Clique Problem. *European Journal of Operational Research*, 294(1), pp. 54-69.

ALFANDARI, L. et TOULOUSE, S. (2021). Approximation of the Double Traveling Salesman Problem with multiple stacks. *Theoretical Computer Science*, 877, pp. 74-89.

ALFANDARI, L., DENOYEL, V. et THIELE, A. (2020). Solving Utility-Maximization Selection Problems with Multinomial Logit Demand: Is the First-Choice Model a Good Approximation? *Annals of Operations Research*, 292, pp. 553–573.

ZHAO, Y. et ALFANDARI, L. (2020). Design of diversified package tours for the Digital Travel industry: A branch-cut-and-price approach. *European Journal of Operational Research*, 285(3), pp. 825-843.

ZHAO, Y. et ALFANDARI, L. (2020). Design of diversified package tours for the Digital Travel industry: A branch-cut-and-price approach. *European Journal of Operational Research*, 285(3), pp. 825-843.

ALFANDARI, L., DAVIDOVIC, T., FURINI, F., LJUBIC, I., MARAS, V. et MARTIN, S. (2019). Tighter MIP models for Barge Container Ship Routing. *Omega*, 82, pp. 38-54.

FARD, M.K. et ALFANDARI, L. (2019). Trade-Offs Between the Stepwise Cost Function and Its Linear Approximation for the Modular Hub Location Problem. *Computers & Operations Research*, 104, pp. 358-374.

ESPINOZA GARCIA, J.C. et ALFANDARI, L. (2018). Robust Location of New Housing Developments Using a Choice Model. *Annals of Operations Research*, 271, pp. 527–550.

ALFANDARI, L. et ESPINOZA GARCIA, J.C. (2018). Robust Optimization for Non-Linear Impact of Data Variation. *Computers & Operations Research*, 99, pp. 38-47.

DENOYEL, V., ALFANDARI, L. et THIELE, A. (2017). Optimizing Healthcare Network Design Under Reference Pricing and Parameter Uncertainty. *European Journal of Operational Research*, 263(3), pp. 996-1006.

GIANESSIA, P., ALFANDARI, L., LETOCART, L. et WOLFLER CALVOA, R. (2016). A Column Generation Based Heuristic for the Multicommodity-Ring Vehicle Routing Problem. *Transportation Research Procedia*, 12, pp. 227-238.

BUTELLE, F., ALFANDARI, L., COTI, C., FINTA, L., LÉTOCART, L. et PLATEAU, G. (2016). Fast Machine Reassignment. *Annals of Operations Research*, 242(1), pp. 130-160.

GIANESSI, P., ALFANDARI, L., LÉTOCART, L. et CALVO, R.F. (2016). The Multicommodity-Ring Location Routing Problem. *Transportation Science*, 50(2), pp. 541-558.

ALFANDARI, L., PLATEAU, A. et SCHEPLER, X. (2015). A Branch-and-Price-and-Cut Approach for Sustainable Crop Rotation Planning. *European Journal of Operational Research*, 241(3), pp. 872-879.

ALFANDARI, L. et MONNOT, J. (2014). A Note on the Clustered Set Covering Problem. *Discrete Applied Mathematics*, 1(164), pp. 13-19.

ALFANDARI, L., SADKI, J., PLATEAU, A. et NAGIH, A. (2013). Hybrid Column Generation for Large-Size Covering Integer Programs: Application to Transportation Planning. *Computers & Operations Research*, 40(8), pp. 1938-1946.

ROZENKNOP, A., WOFLER, C., ALFANDARI, L., CHEMLA, D. et LETOCART, L. (2013). Solving Electricity Production Planning By Column Generation. *Journal of Scheduling*, 16(6), pp. 585-604.

ALFANDARI, L., LEMALADE, J.L., NAGIH, A. et PLATEAU, G. (2011). A MIP Flow Model for Crop-Rotation Planning in a Context of Forest Sustainable Development. *Annals of Operations Research*, 190(1), pp. 149-164.

LIBERTI, L., ALFANDARI, L. et PLATEAU, M.C. (2011). Edge Cover by Connected Bipartite Subgraphs. *Annals of Operations Research*, 188(1), pp. 307-329.

ALFANDARI, L. (2007). Improved Approximation of the General Soft-capacitated Facility Location Problem. *RAIRO - Operations Research*, pp. 83-93.

ALFANDARI, L. (2001). The Minimum Bounded-Diameter Spanning Forest Problem Is Log-Approximable. *Foundations of Computing and Decision Sciences*, pp. 123-132.

ALFANDARI, L. et PASCHOS, V. (2000). Master-slave Strategy and Polynomial Approximation. *Computational Optimization and Applications*, pp. 231-245.

ALFANDARI, L. et PASCHOS, V. (1999). Approximating Minimum Spanning Tree of Depth 2. *International Transactions in Operational Research*, pp. 607-622.

ALFANDARI, L. (1999). The Greedy Approach for the Crew Pairing Problem: Some Cases of Polynomial Subproblems. *Cahiers du Lamsade (Laboratoire d'Analyse et de Modélisation de Systèmes d'Aide)*, pp. 1-10.

### Chapitres d'ouvrage

ALFANDARI, L. (2018). Décision et complexité : le cas de la planification optimale de tout simplisme. Dans: *Complexité et organisations : faire face aux défis de demain*. 1st ed. Eyrolles, pp. 229-242.

ALFANDARI, L. et NAGIH, A. (2010). Applications of Combinatorial Optimization: Airline Crew Pairing Optimization. Dans: *Applications of Combinatorial Optimization*. 1st ed. Wiley, pp. 1-22.

ALFANDARI, L. et NAGIH, A. (2006). Optimisation de la construction de rotations d'équipages en transport aérien. Dans: *Optimisation combinatoire 3. Applications (traité IC2)*. 1st ed. Hermès Sciences, Lavoisier, pp. 23-45.

ALFANDARI, L., PLATEAU, A. et TOLLA, P. (2004). A Path Relinking Algorithm for the Generalized Assignment Problem. Dans: *Metaheuristics Computer Decision-making*. 1st ed. Kluwer Academic Publishers, pp. 1-17.

### Actes d'une conférence

ALFANDARI, L. et MONNOT, J. (2010). Approximation of the Clustered Set Covering Problem. Dans: *Electronic Notes in Discrete Mathematics*. ISCO.

ALFANDARI, L. et PASCHOS, V. (1998). On the Approximation of Some Spanning Arborescence Problems. Dans: *Advances in Computer and Information Sciences '98. 13th International Symposium on Computer and Information Sciences (ISCIS)*. IOS Press, pp. 574-581.

### Conférences

ALFANDARI, L., LJUBIC, I. et PUNAM-MANDAL, M. (2023). Robust Facility Location in Disaster Preparation for Earthquakes with Aftershocks. Dans: OR 2023: Decision Support & Choice-Based Analytics for a Disruptive World. Hamburg.

ALFANDARI, L. (2023). Approximation of the Double Traveling Salesman Problem with Multiple Stacks. Dans: 23rd Congress of International Federation of Operational Research Societies (IFORS) 2023. Santiago de Chile.

PAPIER, F. et ALFANDARI, L. (2023). Scheduling Customer-preference-based Field Appointments Under Uncertainty. Dans: 2023 INFORMS Annual Meeting. Phoenix.

DELLE DONNE, D., KUZBAKOV, Y. et ALFANDARI, L. (2023). A Branch-and-price Approach for Last-mile Deliveries with Capacitated Robot Stations. Dans: 23rd Conference of the International Federation of Operational Research Societies 2023. Santiago.

DELLE DONNE, D., ALFANDARI, L., ARCHETTI, C. et LJUBIC, I. (2022). Freight-on-Transit for urban last-mile deliveries: A Strategic Planning Approach. Dans: International Workshop on Freight Transportation and Logistics (ODYSSEUS). Tanger.

DELLE DONNE, D., ALFANDARI, L., ARCHETTI, C. et LJUBIC, I. (2022). Freight-on-Transit for urban last-mile deliveries: A Strategic Planning Approach. Dans: Spanish Conference on Statistics and Operations Research (SEIO). Granada.

PAPIER, F., ALFANDARI, L. et TEO, C.P. (2022). Market Thickness In Online Food Delivery Platforms: The Impact Of Food Processing Times. Dans: 2022 Institute for Operations Research and the Management Sciences (INFORMS) Annual Meeting. Indianapolis.

ARCHETTI, C., ALFANDARI, L. et ALFANDARI, L. (2022). Capacity Design and Resource Allocation in Online Food Delivery Platforms. Dans: International Workshop on Freight Transportation and Logistics (Odysseus 2022). Tanger.

ARCHETTI, C., ALFANDARI, L. et ALFANDARI, L. (2022). Capacity Design and Resource Allocation in Online Food Delivery Platforms. Dans: International Workshop on Freight Transportation and Logistics (Odysseus 2022). Tanger.

ALFANDARI, L. (2022). Optimizing Drone Use in Early Infant Diagnosis of HIV Supply Chainin Less Developed Countries. Dans: 2022 Euro. Espoo.

FURINI, F., LJUBIC, I., SAN SEGUNDO, P. et ZHAO, Y. (2021). The Edge Interdiction Clique Problem. Dans: 31st European Conference on Operational Research 2021. Athens (virtual).

ALFANDARI, L., LJUBIC, I. et DE MELO DA SILVA, M. (2021). A tailored Benders Decomposition Approach for Last-Mile Delivery With autonomous Robots. Dans: 31st European Conference on Operational Research 2021 (EURO 2021). Athens.

DELLE DONNE, D., ALFANDARI, L., ARCHETTI, C. et LJUBIC, I. (2021). Freight on Public Transport: Strategical decision making with mixed integer programming. Dans: European Conference on Operational Research (EURO). Athens.

ALFANDARI, L., HASSANZADEH, A. et LJUBIC, I. (2020). Une méthode exacte pour le problème d'assortiment optimal avec modèle de choix nested-logit. Dans: 21st ROADEF 2020.

ALFANDARI, L. et PAPIER, F. (2019). Call-Center-Based Scheduling of Sales Field Visits. Dans: 2019 POMS Annual Conference.

ALFANDARI, L. et ALFANDARI, L. (2019). Le problème de Team Orienteering avec contraintes de diversité entre les tours : Une approche de Branch-and-Price-and-Cut. Dans: ROADEF 2019.

ALFANDARI, L. et ALFANDARI, L. (2019). Le problème de Team Orienteering avec contraintes de diversité entre les tours : Une approche de Branch-and-Price-and-Cut. Dans: ROADEF 2019.

ALFANDARI, L., LJUBIC, I. et MELO, M. (2019). Optimal Vehicle Routing with Autonomous Devices for Last-Mile Delivery. Dans: 2019 Workshop of the EURO Working Group on Vehicle Routing and Logistics optimization (VeRoLog 2019).

ALFANDARI, L. et ESPINOZA-GARCIA, J.C. (2019). Robust optimization for non-linear impact of data variation. Dans: 30th European Conference on Operational Research (EURO 2019). Dublin.

ALFANDARI, L. et PAPIER, F. (2018). Heuristics for Call-Center-Based Scheduling of Field Visits. Dans: 7th Meeting of the EURO Working Group on Stochastic Modelling (StochMod 2018).

ALFANDARI, L., DAVIDOVIC, T., FURINI, F., LJUBIC, I., MARAS, V. et MARTIN, S. (2018). New MIP models for liner shipping route design with empty container repositioning. Dans: 4th International Conference on Logistics Operations Management (GOL'2018).

ALFANDARI, L. et ESPINOZA-GARCIA, J.C. (2018). Optimisation robuste pour la localisation de nouveaux logements avec modèle de choix. Dans: 19ème Congrès de la société Française de Recherche Opérationnelle et d'Aide à la Décision (ROADEF 2018).

ALFANDARI, L. et ESPINOZA-GARCIA, J.C. (2018). Robust Optimization for Non-Linear Impact of Data Variation. Dans: ISMP Bordeaux 2018 (International Symposium of Mathematical Optimization).

ALFANDARI, L. (2018). Robust Optimization for Non-Linear Impact of Data Variation. Dans: Workshop on Robust Optimization Avignon (RO 2018).

ALFANDARI, L., FURINI, F., LJUBIC, I. et MARTIN, S. (2017). New MIP models for Liner Shipping Route Design with Empty Container Repositioning. Dans: 18ème Conférence ROADEF de la Société Française de Recherche Opérationnelle et d'Aide à la Décision.

ALFANDARI, L., DAVIDOVIC, T., FURINI, F., LJUBIC, I., MARAS, V. et MARTIN, S. (2017). Tighter MIP Formulations for the Barge Container Ship Routing Problem. Dans: 21st Conference of the International Federation of Operational Research Societies (IFORS).

ALFANDARI, L., DENOYEL, V. et THIELE, A. (2016). Optimisation robuste pour la sélection d'un réseau d'hôpitaux dans un système de Prix de Référence. Dans: 17ème congrès de la société Française de Recherche Opérationnelle et d'Aide à la Décision (ROADEF2016).

ALFANDARI, L. et KESHVARI-FARD, M. (2015). Localisation de hubs avec fonction de coût discrète. Dans: ROADEF February Conference.

ALFANDARI, L., DENOYEL, V. et THIELE, A. (2015). Robust in Network Selection of Hospitals by Healthcare Under Reference Pricing. Dans: EURO 2015 12 July 2015 Conference.

ALFANDARI, L., DENOYAL, V. et THIELE, A. (2014). Optimal Facility In-Network Selection for Healthcare Payers under Reference Pricing. Dans: 20th Conference of the International Federation of Operational Research Societies.

ESPINOZA, I.C. et ALFANDARI, L. (2014). Robust Facility Location Optimization with Location-dependent Demands. Dans: 2014 INFORMS Annual Meeting.

ALFANDARI, L., PLATEAU, A. et SCHEPLER, X. (2014). Un algorithme de branch-and-price-and-cut pour la planification durable des rotations agricoles. Dans: 15ème congrès annuel de la Société française de recherche opérationnelle et d'aide à la décision (ROADEF).

ALFANDARI, L. (2013). Approximation du problème de Clustered Set Covering. Dans: 14ème Conférence ROADEF 2013.

ALFANDARI, L., NAGIH, A., PLATEAU, A. et SADKI, J. (2013). Hybrid Column Generation for Large-Size Covering Integer Programs. Dans: 26th Conference of European Chapter on Combinatorial Optimization.

ALFANDARI, L., NAGIH, A., PLATEAU, A. et SADKI, J. (2013). Hybrid Column Generation for Large-Size Integer Programs. Dans: 26th EURO – INFORMS Joint International Conference.

ALFANDARI, L. (2013). Un algorithme de BranchandPrice pour le problème de planification durable de rotations culturales. Dans: 14ème Conférence ROADEF 2013.

ALFANDARI, L., NAGIH, A., PLATEAU, A. et SADKI, J. (2012). Generalizations of Dobson Approximation Algorithm and Cooperation with Column Generation for Large-Size Covering Integer Programs. Dans: 2nd International Symposium on Combinatorial Optimization (ISCO 2012).

ALFANDARI, L. (2012). Planification et routage pour l'optimisation de la distribution urbaine de marchandise. Dans: 13e congrès annuel de la Société Française de Recherche Opérationnelle et d'Aide à la Décision (ROADEF 2012).

ALFANDARI, L., NAGIH, A., PLATEAU, A. et SADKI, J. (2011). Hybridization of Column Generation and Approximation Heuristics for Large-size Covering Integer Programs. Dans: MIC 2011 - Metaheuristics International Conference.

ALFANDARI, L., NAGIH, A., PLATEAU, A. et SADKI, J. (2011). Schéma hybride de génération de colonnes pour un problème de planification de production agricole. Dans: ROADEF 2011.

ALFANDARI, L. (2000). Logical Definability of Covering and Partitioning Minimization Problems. Dans: CLAIO X (Congresso Latino-Americano de Investigacion Operativa)-Latin-American Congress of Operations Research, Mexico.

#### Invité dans une conférence académique

ALFANDARI, L., LJUBIC, I. et DE MELO DA SILVA, M. (2022). A Tailored Benders Decomposition Approach for Last-mile Delivery with Autonomous Robots. Dans: International Conference on Operations Research and Enterprise Systems (ICORES). Online.

#### Documents de travail

DELLE DONNE, D., ALFANDARI, L., ARCHETTI, C. et LJUBIC, I. (2021). *Freight-on-Transit for urban last-mile deliveries: A Strategic Planning Approach*. 2104, ESSEC Business School.

ALFANDARI, L., LJUBIC, I. et DE MELO DA SILVA, M. (2019). *On last-mile Delivery with Autonomous Robots*. ESSEC Business School.

KESHVARI FARD, M. et ALFANDARI, L. (2018). *Trade-offs between the Stepwise Cost Function and its Linear Approximation for the Modular Hub Location Problem*. ESSEC Business School.

ESPINOZA GARCIA, J.C. et ALFANDARI, L. (2015). *Robust Location of New Housing Developments Using a Choice Model*. ESSEC Business School.

ALFANDARI, L., PLATEAU, A. et SCHEPLER, X. (2014). *A Branch-and-Price-and-Cut Approach for Sustainable Crop Rotation Planning*. ESSEC Business School.

ALFANDARI, L. (2005). *Improved Approximation of the General Soft-Capacitated Facility Location Problem*. ESSEC Business School.

ALFANDARI, L. (2004). *Choice Rules with Size Constraints for Multiple Criteria Decision Making*. ESSEC Business School.

ALFANDARI, L., PLATEAU, A. et TOLLA, P. (2002). *A Path-relinking Algorithm for the Generalized Assignment Problem*. ESSEC Business School.

ALFANDARI, L. et PLATEAU, A. (2001). *A two-phase Path Relinking algorithm for the Generalized Assignment Problem*.

#### Presse

DELLE DONNE, D., ARCHETTI, C., LJUBIC, I. et ALFANDARI, L. (2023). When public transport delivers. *ESSEC Knowledge*.

ALFANDARI, L., ARCHETTI, C. et LJUBIC, I. (2021). Sustainable city logistics. *ESSEC Knowledge*.

## AUTRES ACTIVITES DE RECHERCHE

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#### Selecteur pour :

Annals of Operations Research, Computational Optimization and Applications, Computers & Operations Research, Discrete Applied Mathematics, European Journal of Operational Research, RAIRO - Operations Research

#### Organisation d'une conférence

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|------|---|
| 2015 | Organisation du concours Français de la RO: "Les Pros de la RO", nov. 2015<br>(finalistes : Gefco-Eurodecision, Amadeus, Decision Brain, Orange), France  |
| 2013 | Organisation d'un évènement pour les praticiens et managers : "La Recherche Opérationnelle: clé de la performance des entreprises?" 200 managers et praticiens présents, et une table ronde avec Air France, Amadeus, et Bouygues |

## Affiliations

- 2011 - 2015 Vice-President de la ROADEF  
Depuis 2000 Membre de la Société Française de RO (ROADEF)

## Supervision de thèses / HDR

- 2020 Y. ZHAO (ESSEC Business School), Co-directeur de thèse  
2018 Milad KESHVARI FARD (ESSEC Business School), Co-directeur de thèse, Premier Poste : Assistant Professor - Newcastle University Business School  
2017 Victoire GARNIER ép DENOYEL (ESSEC Business School), Directeur de thèse, Premier Poste : Assistant Professor, Business Analytics - Mercy College Graduate School of Business  
2017 Juan Carlos ESPINOZA (ESSEC Business School), Directeur de thèse, Premier Poste : Assistant Professor - Tecnologico de Monterrey  
2014 P. GIANESSI (Université Sorbonne Paris Nord (XIII)), Co-directeur de thèse  
2011 J. SADKI (Université Sorbonne Paris Nord (XIII)), Co-directeur de thèse  
2006 , Co-directeur de thèse

## Autres activités de recherche

- Depuis 1970 Membre de GREFELOT: le groupe Francilien de Recherche sur l'Environnement, la Logistique, et les Transports

## ACTIVITES PROFESSIONNELLES

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### Consulting

- 1970 - Présent Activités de conseil et contrats industriels : SNCF, ESSEC BS, Babcock-Wanson, Aid-Impact...