

# Laurent ALFANDARI

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Professeur

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

## DIPLÔMES

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|      |  |
|------|--|
| 1999 | Doctorat en Recherche Opérationnelle<br>(Université Paris-Dauphine, PSL University France)                 |
| 1995 | Master of Research, Sciences du Management<br>(Université Paris-Dauphine, PSL University France)           |
| 1993 | M.Sc in Management (Grande Ecole program)<br>(ESSEC Business School France)                                |
| 1990 | Licence - Mathématiques & Sciences Sociales<br>(Université Paris-Dauphine, PSL University France)          |
| 2010 | International Teachers Program (ITP)<br>(Kellogg School of Management, Northwestern University États-Unis) |

## CARRIÈRE

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### POSITIONS ACADÉMIQUES PRINCIPALES

|                   |   |
|-------------------|---|
| 2000 - 2007-08-31 | Professeur assistant (ESSEC Business School France) |
| 2007 - 2010-08-31 | Professeur associé (ESSEC Business School France)   |
| 2010 - Présent    | Professeur (ESSEC Business School France)           |

### AUTRES POSITIONS

|                   |  |
|-------------------|--|
| 2002 - Présent    | Membre du LIPN (Sorbonne Université France)                                      |
| 1995 - 2002-08-31 | Membre du Laboratoire LAMSADE (Université Paris-Dauphine, PSL University France) |

2012 - 2014-12-31 Responsable de département (ESSEC Business School France)

## **POSITIONS PROFESSIONNELLES**

1993 - 1993-12-31 Conseil en Urbanisme et Développement de Commerce Spécialisés (PROCOS France)

1992 - Présent Auditeur interne (TOTAL France)

1992 - 1992-12-31 Contrôleur de Gestion (Hachette France)

1991 - 1991-12-31 Marketing (Hachette France)

## **AUTRES POSITIONS ACADÉMIQUES**

2018 - 2021-08-31 Responsable de filière PHD Opération & Data Analytics (ESSEC Business School France)

2019 - 2023-08-31 CO-Responsable DU MASTER IN DATA SCIENCES AND BUSINESS ANALYTICS (ESSEC Business School France)

2013 - Présent Responsable de filière business analytics methods (ESSEC Business School France)

2009 - 2011-08-30 Directeur académique / Responsable académique (ESSEC Business School France)

## **PUBLICATIONS**

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### **ARTICLES**

[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.](#)

[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. \(1999\). 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.](#)
- [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., 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.](#)
- [LIBERTI, L., ALFANDARI, L. et PLATEAU, M.C. \(2011\). Edge Cover by Connected Bipartite Subgraphs. \*Annals of Operations Research\*, 188\(1\), pp. 307-329.](#)
- [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.](#)
- [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.](#)
- [ALFANDARI, L. \(2007\). Improved Approximation of the General Soft-capacitated Facility Location Problem. \*RAIRO - Operations Research\*, pp. 83-93.](#)
- [ALFANDARI, L. et PASCHOS, V. \(2000\). Master-slave Strategy and Polynomial Approximation. \*Computational Optimization and Applications\*, pp. 231-245.](#)
- [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.](#)
- [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.](#)
- [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.](#)
- [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.](#)
- [ALFANDARI, L. et MONNOT, J. \(2014\). A Note on the Clustered Set Covering Problem. \*Discrete Applied Mathematics\*, 1\(164\), pp. 13-19.](#)
- [ALFANDARI, L. et PASCHOS, V. \(1999\). Approximating Minimum Spanning Tree of Depth 2. \*International Transactions in Operational Research\*, pp. 607-622.](#)

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

[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.](#)

[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.](#)

[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.](#)

[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.](#)

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

[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.](#)

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

## **CHAPITRES**

[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.](#)

[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. \(2018\). 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. \(2006\). 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.](#)

## **DOCUMENTS DE TRAVAIL**

[ALFANDARI, L., LJUBIC, I. et DE MELO DA SILVA, M. \(2019\). \*Onlast-mile Delivery with Autonomous Robots\*. ESSEC Business School.](#)

[ESPINOZA GARCIA, J.C. et ALFANDARI, L. \(2015\). \*Robust Location of New Housing Developments Using a Choice Model\*. 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.](#)

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

[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., PLATEAU, A. et TOLLA, P. \(2002\). \*A Path-relinking Algorithm for the Generalized Assignment Problem\*. ESSEC Business School.](#)

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

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

## **COMMUNICATIONS DANS UNE CONFÉRENCE**

[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. \(2013\). Approximation du problème de Clustered Set Covering. 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., 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., 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. et ZHAO, Y. (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 KESHVARI-FARD, M. (2015). Localisation de hubs avec fonction de coût discrète. Dans: ROADEF February Conference.

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.

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. (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., 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.

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. (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., 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. (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).

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

[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. 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. 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., 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., 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. \(2013\). Un algorithme de Branch-and-Price pour le problème de planification durable de rotations culturales. Dans: 14ème Conférence ROADEF 2013.](#)

[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., 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. \(2022\). 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. \(2021\). Freight on Public Transport: Strategical decision making with mixed integer programming. Dans: European Conference on Operational Research \(EURO\). Athens.](#)

[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.](#)

[ARCHETTI, C., ALFANDARI, L. et ZHAO, Y. \(2022\). Capacity Design and Resource Allocation in](#)

[Online Food Delivery Platforms. Dans: International Workshop on Freight Transportation and Logistics \(Odysseus 2022\). Tanger.](#)

[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.](#)

[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.](#)

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

## **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.](#)

## **ARTICLES OU VIDÉOS DE VULGARISATION**

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

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

## **INVITÉ DANS UNE CONFÉRENCE ACADÉMIQUE (KEYNOTE SPEAKER)**

[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.](#)



## **ACTIVITÉS DE RECHERCHE**

- 2013 - 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 Télécom (Université Paris-Dauphine, PSL University France)
- 2015 - 2015: Organisation du concours Français de la RO: "Les Pros de la RO", nov. 2015 (finalistes : Gefco-Eurodecision, Amadeus, Decision Brain, Orange) ( France)
- 2000 - Présent: Membre de la Société Française de RO (ROADEF)
- 2011 - 2015: Vice-Président de la ROADEF
- 1970 - Présent: Membre de GREFELOT: le groupe Francilien de Recherche sur l'Environnement, la Logistique, et les Transports

## **ACTIVITÉS PROFESSIONNELLES**

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