



Henri Lefebvre

23 years old

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Driving licence

Applies for PhD position :

Benders Decomposition for Convex Mixed-Integer Nonlinear Optimisation

Work experience

February 2019 - July 2019 (6 months)

Research intern in robust linear optimization

INRIA - RealOpt - Bordeaux (France)

- Robust $1|r_j|\sum w_j U_j$ with integer recourses
- $\min_{x \in \mathcal{X}} \max_{\xi \in \Xi} \min_{y \in \mathcal{Y}(x)} f(x, \xi, y)$ problems
- Branch-and-price, Dantzig-Wolfe reformulation
- Polyhedral analysis
- K -adaptability approach comparison

C++, IBM Cplex

September 2018 - August 2018 (12 months)

Backend developer on Amazon Web Services

Wide Asset Management - Paris (France)

- Mobile application backend development
- E-signature solution implementation
- Investment engine development
- Parallel/asynchronous events management

Finance, AWS, NoSQL, DynamoDB, node.js

Projects and achievements

December 2018 - March 2019 (4 months)

Electrical Vehicle Routing Problem heuristic

Università degli studi di Genova - Genova (Italy)

- Vehicle Routing Problem with capacitated recharging stations and time windows for deliveries
- Simulated Annealing (SA)
- Variable Neighbourhood Search (VNS)

C++, E-VRP-TW, 2-OPT moves

February 2018 - June 2018 (5 months)

Multimodal Itinerary Planning

Heudiasyc laboratory - Compiègne (France)

- Dijkstra's algorithm with time dependencies
- Real Google Transit Format Specification (GTFS) instances for graph generation (Paris, Rome, ...)

Python, SQLite, time expanded/dependent model

April 2017 - June 2017 (3 months)

Board game artificial intelligence

University of Technology - Compiègne (France)

- Autonomous player for Arimaa board game
- Logic programming for adversary's strategy

Prolog, symbolic artificial intelligence

Education

2014 - 2019 (5 years)

Engineer's degree in Computer Science

University of Technology - Compiègne (France)

- Major : Decision support applied to logistics
- Minor : Philosophy, Technology and cognition
- Study semester in Shanghai University (China)

2018 - 2019 (12 months)

Laurea Magistrale en Informatica

Università degli studi di Genova - Italy

- Major : Logistics and production

2018 - 2019 (12 months)

Master degree - Complex systems Engineering

University of Technology - Compiègne (France)

- Major : Optimization and learning of systems

Skills

Sciences

- Linear and non linear optimization (LP, MILP, KKT)
- Optimization under uncertainty (robust, stochastic)
- Decomposition methods (Dantzig-Wolfe, Benders)
- Heuristics and metaheuristic methods
- Mathematical modeling
- Exact approaches
- Machine learning and statistics
- Numerical analysis

Programming

- C++
- Python 3
- IBM Cplex
- Lingo
- GNU R
- SciLab
- L^AT_EX
- Linux
- Git
- Amazon Web Services

Langues

- English (TOEIC 965)
- Français
- Spanish (basic)

Interests

- Environment
- Cognitive sciences
- Vulgarization
- French poetry