

Tifaout ALMEFTAH *PhD Candidate in Operations Research*

Centre de Recherche INRIA de l'Université de Lille, Park
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EDUCATION

- 12/2021 – present
Villeneuve d'Ascq, France **PhD in Operations Research**, *Centre INRIA de l'Université de Lille (INOCS team) - Centrale Lille* [↗](#)
Topic: "Advanced Optimization Algorithms for Group Testing"
Supervisors: Pr. Martine Labbé, Pr. Frédéric Semet et Dr. Diego Cattaruzza
- **Winter School:** NetOpt2024 in Estoril, Winter School on Network Optimization (25 hours)
- **Summer School:** JPOC13 in Clermont-Ferrand, Summer School on Combinatorial Optimization and Learning (12 hours)
- 2017 – 2019
Metz, France **Master's in Decision Informatics, Optimization and Algorithmics**, *Université de Lorraine*
Program [↗](#)
- 2014 – 2017
Metz, France **Bachelor's in Computer Science**, *Université de Lorraine*
Program : 1st [↗](#), 2nd [↗](#) and 3rd [↗](#) years.
- 2013 – 2014
Errachidia, Maroc **Baccalaureate in Mathematical Sciences - Engineering Sciences**, *Lycée Technique*

PROFESSIONAL EXPERIENCE

- 02/2024 – 04/2024
Villeneuve d'Ascq, France **Adjunct Lecturer in Optimization and Prescriptive Analysis**, *Centrale Lille*
Role: Conducted practical sessions for L3/M1 students (24 hours)
- 02/2023 – 05/2023
Villeneuve d'Ascq, France **Adjunct Lecturer in Optimization and Prescriptive Analysis**, *Centrale Lille*
Role: Conducted practical sessions for L3/M1 students (18 hours)
- 02/2022 – 05/2022
Villeneuve d'Ascq, France **Adjunct Lecturer in Optimization and Prescriptive Analysis**, *Centrale Lille*
Role: Conducted practical sessions for L3/M1 students (16 hours)
- 12/2019 – 11/2021
Villeneuve d'Ascq, France **Research Engineer**, *Centre INRIA de l'Université de Lille (équipe INOCS)*
- Developed a hybrid genetic algorithm for vehicle routing problems with time windows, multiple depots, and multi-periods (software used by UrbanHub <https://www.urbanhub.fr/> [↗](#)).
- Designed group testing strategies for COVID-19 in collaboration with CHU de Lille, including software implementation, data analysis, and contributing to the research report.
(cf. <https://www.inria.fr/fr/covid-19-quand-des-chercheurs-dinria-optimisent-le-group-testing> [↗](#)).
- 04/2019 – 09/2019
Metz, France **Research Internship (Master's)**, *Laboratoire LCOMS, Université de Lorraine*
Topic: Decomposition algorithms for equity in vehicle routing problems.
Supervisors: Prof. Anass Nagih, Prof. Nicolas Jozefowicz
- 2017 – 2018
Metz, France **Algorithmic Tutor**, *Université de Lorraine*
Role: Tutored first-year students in algorithmic concepts (10 heures)
- 05/2017 – 07/2017
Pont-à-Mousson, France **Web Development Internship (Bachelor's)**, *Association Les 2 Rives*
Project: Designed and implemented a showcase website using the WordPress CMS.

SCIENTIFIC OUTREACH

- 11/2023
Villeneuve d'Ascq, France **Popular Science Presentation at INRIA's Monthly Meeting**, *21 November*
"Group Testing: When Less Equals More!"
- 10/2023
Villeneuve d'Ascq, France **Rendez-vous des Jeunes Mathématiciennes et Informatiennes (RJMI)**, *26-27 October*
Organization of an Operational Research Workshop and a Speed-Meeting for High School Girls
- 10/2023
Cambrai, France **Filles, maths et informatique : une équation lumineuse**, *19 October*
Speed-Meeting
- 06/2023
Lille, France **Science Communication Session for High School Students**, *1st June*
Presentation of My Background, Profession, and PhD Thesis Topic for high school students in Digital and Computer Sciences
- 03/2023
Villeneuve D'ascq, France **Hosting of Middle School Interns**, *6 March*
Introducing Middle School Students to Operations Research and Optimization

- 11/2022
Villeneuve D'Ascq, France **Rendez-vous des Jeunes Mathématiciennes et Informatiennes (RJMI), 3-4 November** [↗](#)
Organization of an Operational Research Workshop and a Speed-Meeting for High School Girls
- 10/2022
Dunkerque, France **Filles, maths et informatique : une équation lumineuse, 20 October** [↗](#)
Speed-meeting
- 10/2021
Arras, France **Filles, maths et informatique : une équation lumineuse, 21 October** [↗](#)
Speed-meeting

PUBLICATIONS

- Group design in group testing for COVID-19: A French case-study** [↗](#)
Almeftah, T., Brotcorne, L., Cattaruzza, D., Fortz, B., Keita, K., Labbé, M., Ogier, M., et Semet, F. (2020)
Research report INRIA

CONFERENCES

- 05/2024
Tenerife, Spain **International Symposium on Combinatorial Optimization 2024, 22-24 May** [↗](#)
Optimal risk-based non-adaptive two-dimensional group testing with equal group size, **T. Almeftah**, D. Cattaruzza, M. Labbé, F. Semet
- 05/2023
Chania, Greece **The 36th Conference of the European Chapter on Combinatorial Optimization, 11-14 Mai** [↗](#)
A Branch-and-Price-and-Cut algorithm for non-adaptive two-dimensional group testing with equal group size, **T. Almeftah**, D. Cattaruzza, M. Labbé, F. Semet
- 02/2023
Rennes, France **24^{ème} Congrès de la Société Française de la Recherche Opérationnelle et d'Aide à la Décision, 20-23 février** [↗](#)
A Branch-and-Price-and-Cut algorithm for non-adaptive two-dimensional group testing with equal group size, **T. Almeftah**, D. Cattaruzza, M. Labbé, F. Semet

TALKS

- 11/2023
Villeneuve d'Ascq, France **Team Seminar, INRIA de l'Université de Lille, 11 November**
T. Almeftah, D. Cattaruzza, M. Labbé, F. Semet
- 06/2022
Villeneuve d'Ascq, France **OPTIMA CRISAL Working Group Day, 17 June**
Advanced Optimization Algorithms for Group Testing

COMPLEMENTARY EXPERIENCE

- 03/2024 – 06/2024
Villeneuve d'Ascq, France **Supervision of Ms. Elise Françoise, 3rd year, Centrale Lille**
Research Immersion Internship:
Heuristics for designing two-dimensional groups with equal group size.
- 03/2022 – 07/2022
Rabat, Morocco **Supervision of Mr. Mehdi El Mhor, CPGE MPSI**
TIPE Project (Supervised Personal Initiative Work)
Group Testing for COVID-19: Heuristics for Group Design.
- 03/2020
Lille, France **hackAteck 2020, Shake science. Shape innovation.** [↗](#)
A hackathon in the form of a 54-hour sprint.

SKILLS

Operations Research — Mathematical programming, combinatorial optimization, algorithm design, exact and heuristic methods, decomposition techniques.

Programming — C/C++, LaTeX, Git

Commercial Solvers — Cplex, Gurobi

LANGUAGES

English — Professional, **French** — Fluent, **Arabic** — Native, **Amazigh** — Native, **Spanish** — Beginner

INTERESTS

Documentaries (Science, Aviation, History) | Reading (Science, Philosophy, Psychology, Personal Development) |
Swimming | Cooking | Traveling | Dance