

# Er Raqabi El Mehdi

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## Education

### Polytechnique Montreal (Poly)

Montreal, Canada

*Doctor of Philosophy in Applied Mathematics*

2020 - Present

- Relevant Coursework: Mathematical Programming (A\*), Integer Programming (A\*), Graphs and Networks Theory (A\*), Modeling in Operations Research (A\*), Decomposition Methods and Real-Time Optimization (A\*)
- Top 1% (GPA: 4.0/4.0)

### International University of Japan (IUJ)

Niigata, Japan

*Master of Business Administration*

2017 - 2019

- Relevant Coursework: Operations Management (A\*), Supply Chain Management (A\*), Applied Statistics (A\*), Computer-based Decision Modeling (A\*), Infrastructure Planning and Management (A\*)
- Valedictorian (GPA: 3.89/4.0)

### Ecole Mohammadia d'Ingénieurs (EMI)

Rabat, Morocco

*Master of Engineering in Industrial Engineering*

2013 - 2016

- Relevant Coursework: Operations Research (A), Applied Mathematics (A\*), Probabilities and Statistics (A\*), Data Science (A), Lean Manufacturing (A\*)
- With Honors (GPA: 3.8/4.0)

## Publications

- “Incremental LNS Framework for Integrated Production, Inventory, and Vessel Scheduling: Application to a Global Supply Chain”, **Er Raqabi El Mehdi**, Himmich Ilyas, El Hachemi Nizar, El Hallaoui Issmail and Soumis François, **Major Revision in Omega**, 2022
- “MPILS: An Automatic Tuner for MILP Solvers”, Himmich Ilyas, **Er Raqabi El Mehdi**, El Hachemi Nizar, El Hallaoui Issmail, Metrane Abdelmoutalib and Soumis François, **Major Revision in Computers & Operations Research**, 2022
- “An Electric Vehicle Migration Framework for Public Fleet Planning”, **Er Raqabi El Mehdi** and Li Wenkai, **Minor Revision in Transportation Research Part D: Transport and Environment**, 2022
- “The Primal Benders Decomposition”, **Er Raqabi El Mehdi**, El Hallaoui Issmail and Soumis François, **Soon to be submitted**, 2022
- “OCP Optimizes its Supply Chain for Africa”, **Er Raqabi El Mehdi** et al., **Soon to be submitted**, 2022
- “A Column Generation Framework for the Tail Assignment Problem with Operational Maintenance Constraints”, Sambrekar Akash, **Er Raqabi El Mehdi** and El Hallaoui Issmail, **Soon to be submitted**, 2022
- “Design of Electric Vehicles Charging Station Network”, Master’s Thesis, International University of Japan, 2019

## Honors & Awards

- **GERAD Competition for Doctoral Fellowships ”Conference Fees”**, \$1,750, GERAD, 2022
- **FRQNT Ph.D. Merit Scholarship**, \$77,000, FRQNT, 2021
- **IVADO Ph.D. Excellence Scholarship**, \$75,000, IVADO Institute, 2021
- **Vanier Canada Graduate Scholarship** (“Waitlisted”), \$150,000, Government of Canada, 2021
- **OCP Group Fellowship**, \$32,000, OCP Group, 2020
- **Increased Tuition Fees Exemption**, \$25,000, Polytechnique Montreal, 2020
- **James Brian Quinn Scholar**, *MBA Batch Valedictorian*, IUJ, 2019
- **Beta Gamma Sigma Academic Honor Society**, *Top 1% MBA Batch*, IUJ, 2019
- **Valedictorian Speech**, *IUJ Graduation Ceremony*, IUJ, 2019
- **Dean’s List**, *Academic Terms Distinction* (×3), IUJ, 2017-2019
- **First Year Special Recognition**, *Top 1% MBA Batch*, IUJ, 2018
- **ABE Initiative Scholarship**, \$120,000, Japan International Cooperation Agency, 2017
- **Third Year Valedictorian**, *Distinction*, EMI, 2016
- **EMI Industrial Challenge**, \$2,000, EMI, 2015

## Research Experience

### Groupe d'études et de recherche en analyse des décisions (Gerad)

Montreal, Canada

*Research Assistant*

2020 - Present

- Advisors: Profs. El Hallaoui Issmaïl and Soumis François
- Research Areas: Operations Research, Large-Scale Optimization, Decompositions, Metaheuristics, Solvers, Data Science, ML for OR
- Applications: Airline, Mining, Transportation, Operations and Supply Chain Management
- Collaborations with OCP, UM6P, Laminaar, and IVADO

### International University of Japan

Niigata, Japan

*Research Project*

2018 - 2019

- Advisor: Prof. Li Wenkai
- Developed an Electric Vehicles Migration Framework for Developing Countries
- Collaboration with Fostergy Technologies Inc.

## Work Experience

### Fostergy Technologies Inc.

Niigata, Japan

*Operational Researcher & Data Scientist (Part Time)*

2017 - 2019

- Designing efficient and effective selection of the appropriate electric vehicle components and prediction of its behavior over different kinds of routes/duty cycles and over a huge number of parameters' choices
- Enhancing user's simulation capability and reducing development time many folds

### ProQuest

Yokohama, Japan

*Systems Engineering Intern (Part Time)*

Fall 2018

- Promoting of the on-line ProQuest's product training
- Planning, Designing, and Implementing the use of databases and the conduct of research within IUJ Library

### Induproj

El Jadida, Morocco

*Quality & Safety Manager (Full Time)*

2016 - 2017

- Leading quality management through the international standard ISO 9001, quality control of the work done on the construction sites, and quality assurance into which I was dealing with customers' requirements and seeking their satisfaction
- Leading safety management through the standard OHSAS 18001 and safety control of all the work done on the construction sites. Achieved the main safety KPI of 0 accident

### Bombardier

Casablanca, Morocco

*Operations Management Intern (Full Time)*

Spring 2016

- Designing and implementing an Automated Production System (APS) for assembly lines monitoring
- Introducing Data mining for knowledge extraction

### Managem Group

Tinghir, Morocco

*Industrial Challenge (Full Time)*

Summer 2015

- Modeling and Simulating the Silver Treatment Plant at SMI
- Mapping of Ag rocks flows at SMI

## Teaching Experience

### Polytechnique Montreal

Montreal, Canada

*Teaching Assistant*

2021 - Present

- MTH6406 - Modeling in Operations Research, 4 hours/week for 13 weeks, Masters and Ph.D. (Winter 2021, Winter 2022)

### International University of Japan

Niigata, Japan

*Teaching Assistant*

2018 - 2019

- OPR1010 - Operations Management, 3 hours/week for 12 weeks, Masters (Winter 2019)
- QIS1070 - Computer-based Decision Modeling, 3 hours/week for 12 weeks, Masters (Fall 2019)
- QIS1020 - Applied Statistics, 3 hours/week for 12 weeks, Masters (Fall 2019)

*JDS Tutor*

2017 - 2018

- Tutor for MBA students under the Graduate School of International Management. Topics: QIS1020 - Applied Statistics, QIS1070 - Computer Based Decision Making, ACT1010 - Financial Accounting, FIN1010 - Corporate Finance, ECN1010 - Managerial Economics, 2 hours/week for 48 weeks

## Selected Talks

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### MPILS: An Automatic Tuner for MILP Solvers

- CORS/INFORMS International Conference, Vancouver, Canada, 2022
- JOPT, Montreal, Canada, 2022

### Design of Electric Vehicle Charging Stations

- SLACJ 6th International Conference on Indo-Pacific Studies, Niigata, Japan, 2019

### Achieving Traceability within Supply Chains through Data Science

- International Conference On Advances In Cloud Computing, Data Science And Big Data Analytics, Tokyo, Japan, 2019

## Leadership & Service Activities

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### Organizing & Leadership

- *Science Popularization*: Bringing science to the general public, to disseminate scientific knowledge, foster experience sharing, and introducing research topics to students via Medium & LinkedIn, 2018-Present
- *Better Research Better Life*: Leading the organization and execution of the first Library Day in IUJ history. The initiative is still going on within more Japanese universities, 2019
- *Head of Houses*: Leading the social interaction among international students from around 70 countries through the House System. Our motto is: "Honoring Our Unique Social Environment". The initiative is still going on, 2018

### Outreach & Volunteering

- *Canadian Operations Research Society*: Volunteer in the Montreal Operations Research Student Chapter (MORSC), 2022
- *Industrial Seminars*: Speaker at several seminars within the Industrial Engineering Departement of EMI, 2019-Present
- *Tutor*: Academic orientation and schooling for Moroccan undergraduate and graduate students, 2017-Present
- *Snow Shoveling*: Volunteer in snow shoveling activities to help and support elderly citizens of Minamiuonuma City, 2018

## Skills

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- **Programming & Software**: C++, CPLEX, LaTeX, Excel, PowerPoint (Proficient), Python, R, Git, VBA, SQL (Familiar)
- **Languages**: Arabic (Native), French, English (Bilingual)
- **Interests**: Football, Snowboarding, Swimming

## Selected Media Coverage

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- **IVADO Student Portraits - Er Raqabi El Mehdi**, IVADO Institute, 2022
- **IUJ held its 2019 Graduation Ceremony**, International University of Japan, 2019
- **La coopération japonaise élargit son spectre**, Laformation News, 2017

## References

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*Full Professor*

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### Li Wenkai

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