CARLOS VICTOR DANTAS ARAÚJO

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SOFT SKILLS

Communication | Adaptability | Teamwork | Decision-making | Problem-solving

HARD SKILLS

C/C++ | Java | Python | R | Go | LaTeX | Git | CI/CD | GAMA | NS-2 | SUMO | Stochastic Optimization | Heuristics | Simheuristics | Mathematical Models | Operations Research | Combinatorial Optimization | Statistical Analysis | Simulation

LIBRARIES

Cplex | Gurobi | AMPL | Boost | Lemon | Pandas | Numpy | Matplotlib | Flask | scmamp

LANGUAGES

Portuguese: Native
English: Advanced

WORK EXPERIENCE

Senior Optimization Analyst | KaBuM!

Jan. 2022 - Actual — Limeira - SP

Researcher and Developer specialized in Warehouse and Routing. Acting mainly in APIs for creating order batching, and collection routes.

- Involved in the design, management, and development of multiple optimization projects that present a gain of around 40% in the effectiveness of order collection.
- Development of mathematical models, exact and heuristic solutions for grouping, packing, and routing problems.

AI Researcher | I.Systems

Apr. 2021 - Dec. 2021 — Campinas - SP

Researcher and developer specialized in Supply Chain, more specifically in production planning and job scheduling.

- Involved in the main heuristics development.
- Deploy of the solution in various cloud environments.

RESEARCH EXPERIENCE

Post-graduate | Laboratory of Optimization and Combinatorics

Mar. 2019 - Actual — Campinas - SP

- Study of stochastic optimization and development of simheuristic.
- Development of simulation-based instances for Arc Routing and Multicast Routing Problems.
- Formulation and development of Lagrangian relaxations, (meta)heuristics, and hybrid approaches.

Scientific Initiation | NEMo

Feb. 2017 - Dec. 2020 — Russas - CE

- Formulation and development of relaxations and heuristics for the Maximally Diverse Grouping Problem.
- polyhedral study and development of heuristics using optimality cuts for the Max Cut Problem.
- Study of Data Science and Machine Learning algorithms, generating results applied in Kaggle competitions.

TEACHING EXPERIENCE

Assistant Professor | University of Campinas

Jan. 2020 - Dec. 2020 — Campinas - SP

Assistant Professor of disciplines Programming Challenges I - MO521 and Introduction to Programming and Algorithms - MO102.

Assistant Professor | University of Ceará

Jan. 2017 - Dec. 2017 — Russas - CE

Assistant Professor in the discipline of Introduction to Programming.

EDUCATION

Ph.D. in Computer Science | Combinatorial Optimization

Mar. 2021 - Mar. 2025 — University of Campinas

- GPA: 4.0 on a scale of 4.0
- Advisors: Professor Ph.D. Fábio L. Usberti and Ph.D. Rafael K. Arakaki
- Courses: Parallel Programming, Algorithms and Complexity and Approximation Algorithms.

MSc. in Computer Science | Combinatorial Optimization

Mar. 2019 - Mar. 2021 — University of Campinas

- GPA: 3.6 on a scale of 4.0
- Advisors: Professor Ph.D. Fábio L. Usberti and Professor Ph.D. Cid C. de Souza
- Dissertation: Formulation and Heuristics for the problem of Maximum Service in Multicast Routing with QoS Constraints - a Portuguese version is available in this link
- Courses: Algorithms in Graphs, Integer and Linear Programming and Combinatorial Optimization Topics.

B.S. in Computer Science

Mar. 2015 - Dec. 2018 — University of Ceará

- GPA: 8.46 on a scale of 10.0
- Advisor: Professor Ph.D. Pablo L. B. Soares
- Conclusion Work: Utilização de desigualdades válidas baseadas em condições de otimalidade na construção de algoritmos heurísticos para o problema do corte máximo - a Portuguese version is available in this link

PUBLISHED WORKS

Araújo, C. V. D.; Andrade, M. D.; Usberti, F. L.; Arakaki, R. K. A Prize-Collecting Approach for the Dengue Arc Routing Problem. Simpósio Brasileiro de Pesquisa Operacional (SBPO), 2022. Vol. 0 p. 0-0 (*Approved*)

Araújo, C. V. D.; Usberti, F. L.; de Souza, C. C. Lagrangian Relaxation for the Problem of Maximum Service in Multicast Routing with QoS constraints. International Transactions in Operational Research (ITOR), 2022. Vol. 0 p. 0-0

Araújo, C. V. D.; Figueiredo, T. F. O Problema Da Diversidade Máxima de Grupos: uma abordagem de programação linear inteira. L Simpósio Brasileiro de Pesquisa Operacional (SBPO), 2018.

Araújo, C. V. D.; Figueiredo, T. F. Relaxação Lagrangiana Aplicada ao Problema da Diversidade Máxima de Grupos. Encontros universitários - UFC, 2018. Vol. 0 p. 0-0 ()

Araújo, C. V. D.; Soares, P. L. B. Algoritmo Genético para o Problema Do Corte Máximo. Encontros universitários - UFC, 2018. Vol. 0 p. 0-0 (*Resumo*)

Araújo, C. V. D.; Soares, P. L. B. Estudo de Abordagens para o problema de Corte Máximo. Encontros universitários - UFC, 2017.Vol. 0 p. 0-0 (*Resumo*)

PROFESSIONAL HONORS, AWARDS AND FELLOWSHIPS

- Best Scientific Initiation work in the UFC University Meetings, 2018.
- Second place in the regional phase of the *International Collegiate Programming Contest* (ICPC), 2018.
- National winner of the Portuguese Language Olympiad - Escrevendo o Futuro (2008).