

Bui Quoc Trung

PERSONAL DETAILS

FIRST NAME: Quoc Trung
FAMILY NAME: Bui
TITLE: PhD in Computer Science
PLACE AND DATE OF BIRTH: Thai Binh | 05 September 1986
AFFILIATION: Viettel Research and Development Institute
Hoa Lac, Ha Noi, Viet Nam
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RESEARCH INTERESTS

- NP-hard problems: routing, transportation, logistics, scheduling, planing, resource allocation
- Exact approaches for optimization problems: branch-and-cut algorithms, branch-and-price algorithm, branch-and-infer algorithms
- Heuristic and meta-heuristic approaches for optimization problems: neighborhood search, large neighborhood search, Tabu search
- Machine learning: classification, clustering, forecast for time series
- Simulation: Monte Carlo, agent-based simulation

PUBLICATIONS

- Q.T. Bui, T. Vidal, M.H. Ha. *On three soft rectangle packing problems with the guillotine constraints*, on writing.
- Q.T. Bui, Q.P. Pham, Y. Deville, M.H. Nguyen, M.H. Ha. *Land allocation problem*, on writing.
- Q.T. Bui, T.L.T. Nguyen, Q.B. Nguyen, T.S. Le. *Modelling and Solving Anti-aircraft Mission Planning for Defensive Missile Battalions*, submitted to a journal.
- T.L.T. Nguyen, Q.T. Bui, Q.B. Nguyen, T.S. Le. *Mathematical Programs and Computations for a Class of Anti-aircraft Mission Planning Problems*, ICORES 2018.
- T.L.T. Nguyen, Q.T. Bui, Q.B. Nguyen, T.S. Le. *Modelling and Solving Anti-aircraft Mission Planning for Defensive Missile Battalions*, 11th Annual International Conference on Combinatorial Optimization and Applications (COCOA'17), Shanghai, China, December 2017. Lecture Notes in Computer Science, Springer, 2017.
- Q.T. Bui, T.L.T. Nguyen, Q.B. Nguyen, T.S. Le. *On the Mathematical Program in Theater Anti-aircraft Distribution Problem*, 2017 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM2017), Singapore, December 2017.
- L. Chen, B. Chen, M.H. Ha, Q.T Bui. *Designing service sectors for daily maintenance operations in a road network*, International Journal of Production Research 55 (8), 2251-2265 (2017).
- Q.D Pham, K.T Le, T.H Nguyen, V.D Pham, Q.T Bui. *A Constraint-Based Local Search for offline and online general vehicle routing*, International Journal on Artificial Intelligence Tools 26 (02), 1750004 (2017).

- K.H Pham, M.D Nguyen, Q.T Bui. *Local Search Approach For Pairwise Constrained Clustering Problem*, In Proceeding of Symposium on Information and Communication Technology (SoICT2016), HoChiMinh, Vietnam, 2016.
- Q.T. Bui, Q.D. Pham, Y. Deville. *Exact Methods for Solving the Elementary Shortest and Longest Path Problems*, Annals Operations Research 244 (2), 313-348 (2016).
- Q.T. Bui, Q.D. Pham, Y. Deville. *Solving the Quorumcast Routing Problem as a Mixed Integer Program*, 11th International Conference on Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems (CPAIOR 2014), Cork, Ireland, May 2014, Lecture Notes in Computer Science, Springer, pages 45-54, 2014.
- Q.T. Bui, Q.P. Pham, Y. Deville. *Solving the Agricultural Land Allocation Problem by Constraint-Based Local Search*, 9th International Conference on Principles and Practice of Constraint Programming (CP 2013), Uppsala, Sweden, October 2013. Lecture Notes in Computer Science, Springer, pages 749-757, 2013.
- Q.T. Bui, Q.D. Pham, Y. Deville. *Constraint-based local search for Field Partitioning Problem*, In Proceedings of Symposium on Information and Communication Technology (SoICT2011), Hanoi, Vietnam, pages 19–28, 2011.

EDUCATION

- DECEMBER 2015 PhD in COMPUTER SCIENCE,
Université catholique de Louvain (UCLouvain), Belgium
Thesis: “Modeling and solving complex combinatorial optimization problems: quorumcast routing, elementary shortest and longest paths and agricultural land allocation”
- OCTOBER 2011 Master in COMPUTER SCIENCE,
Institut de la Francophonie pour l’Informatique, Vietnam
Thesis: “Constraint-based local search for field partitioning problem”
- JUNE 2008 Bachelor in COMPUTER SCIENCE (honors program),
VNU, University of Engineering and Technology, Vietnam
- JUNE 2004 Baccalaureate Certificates,
VNU, University of Science, Gifted High School in Math and Informatics (A0), Vietnam

WORKING EXPERIENCES

APRIL 2017- NOW	Researcher at VIETTEL RESEARCH AND DEVELOPMENT INSTITUTE, Hanoi One of two searchers for two projects: Optimal theatre distribution and Combat modelling
JAN 2016- MARCH 2017	Researcher and Lecturer at FPT TECHNOLOGY RESEARCH INSTITUTE (FTRI), FPT UNIVERSITY, Hanoi <ul style="list-style-type: none">• Data science leader in the Vietnamese Financial Institution Healthy Prediction project funded by the World Bank, hosted by the Deposit Insurance of the Vietnam - the State Bank of Vietnam (\$ 17 million), monitored by PwC, covered 39 commercial banks and more than 2000 credit funds of Vietnam<ul style="list-style-type: none">– Prediction of default probabilities for the Vietnamese financial institutions– Forecast of insured deposit for the Vietnamese commercial banks– Prediction of ranking change probabilities for the Vietnamese commercial banks– Estimation of target fund for Deposit Insurance of Vietnam of the Vietnam - the State Bank of Vietnam• Data science advisor for FPT university student drop-out prediction project• Data science leader for Automotive Insurance project funded by Toshiba<ul style="list-style-type: none">– Driving scoring model– Automatic accident detection

TEACHING EXPERIENCES

JAN 2016-MARCH 2017	Lecturer at FPT UNIVERSITY, Hanoi <i>Courses:</i> Data Mining, Artificial Intelligence
APR 2012-DEC 2012	Teaching assistance at UCLouvain, Belgium <i>Course:</i> Object Oriented Programming with Java
DEC 2009-OCT 2010	Lecturer at HANOI UNIVERSITY OF INDUSTRY, Hanoi <i>Courses:</i> Software Engineering, Object Oriented Programming

SCHOLARSHIPS AND CERTIFICATES

- UCLouvain Scholarship for PhD Program at UCLouvain, 2012-2015
- WBI Scholarship for Master Internship at UCLouvain, April - October 2011
- Second and Third Prizes, National Mathematical Olympiads for University Students, 2005 and 2008
- Good student of Vietnam National University Hanoi, 2004

LANGUAGES

ENGLISH: Intermediate
FRENCH: Intermediate
VIETNAMESE: Mothertongue

PROGRAMMING SKILLS

- C/C++, Java, JSP, PHP, MySQL
- CPLEX (strong platform for solving integer programming problems, quadratic programming problems), SCIP (strong platform for mixed integer programming and mixed integer nonlinear programming using branch-and-cut algorithms, branch-and-infer algorithms, branch-and-price algorithms, branch-cut-and-infer algorithm, branch-price-and-cut algorithm)
- OpenCV (open library of programming functions for computer vision), Weka (collection of machine learning algorithms for data mining tasks), R (programming language and software environment for statistical computing and graphics), IRACE (tool for tuning parameters)