

DALMAS Benjamin



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Assistant Professor – IMT

General

I am currently Assistant Professor at the Center for Biomedical and Healthcare Engineering (CIS) at Mines Saint-Etienne in France. I hold a PhD in Computer Science from the Clermont-Auvergne University. My research is focused on Data Science in Healthcare, using a wide range of fields such as Process Mining, Data Mining and Machine Learning. In particular, I am interested in the data engineering aspects of the knowledge discovery pipeline, and how to leverage existing analytics algorithms to include new (types of) datasets. I am also involved in research activities related to the embedding of learning algorithms within optimization methods to solve scheduling problems. Finally yet importantly, I am dedicated in popularization activities, especially aiming at bringing research and education closer.

Education

2015 – 2018	PhD in Computer Science : « New approaches for the detection of high-utility relations in processes : Application to Healthcare », under the supervision of Pr. Sylvie Norre – LIMOS CNRS UMR 6158, Clermont-Auvergne Université, France.
2012-2014	Master MIAGE (Méthodes Informatiques Appliquées à la Gestion des Entreprises), – Aix-Marseille Université, France.

Professional experience

Sept-Dec 2019	Visiting Scholar (3 months) at University Consortium of Pori (Finland)
Sept 2018 – current	Associate Professor in Healthcare Data Science at Mines Saint-Étienne.
Apr-Aug 2018	Data Scientist – Altran Research- <i>Life Sciences</i> , Lyon.
Jan 2017	Visiting Scholar – Eindhoven University of Technology, Netherland
2013 –2015	Business Intelligence Consultant – Key Performance Consulting, Aix-en-Provence

PhD supervision

2019 - current	Chen HE: <i>“Prediction of hospital codes using structured and unstructured data”</i> . The goal of this thesis is to investigate predictive algorithms able to recommend and/or validate the accuracy of ICD codes defined for hospital patients stays.
Oct 2018 – mars 2019	Leila DANTAS: <i>“Predicting the Acquisition of Resistant Pathogens in ICUs using Machine Learning Techniques”</i> . The goal of this thesis is to leverage predictive models to investigate the acquisition of gram-negative drug-resistant bacteria in Brazilian intensive care units. <i>Part of the SticAmSud collaboration.</i>

Teaching activities

2019 - current	MSc HMDI : <i>Big Data and Artificial Intelligence in Healthcare: Challenges and Issues</i> (24h)
2019 - current	MSc HMDI : <i>MedTech & Digital Start-ups</i> (15h)
2019 - current	Defi IA : <i>Machine Learning</i> (30h)
2019 - current	ENISE : <i>Petri Nets</i> (28h)
Previous	Patient Data for Diagnosis, Data Structures, Algorithmic, UML, System programming

Responsibilities

2020	Program committee of the <i>“2nd International Conference on Process Mining”</i> , Padua, Italy.
2020	Organizing committee of the <i>“International Healthcare Week”</i> - Rio de Janeiro, Brazil
2019-current	Program committee of the <i>“Process-Oriented Data Science for Healthcare (PODS4H)”</i> workshops
2018 – current	Creation and Co-Head of MSc international <i>“Health Management & Data Intelligence”</i> (HMDI) held by Mines Saint-Etienne & emlyon business school . This program aims at training students to be crossover professionals, able to deal with both health and technology experts, and is built on three main educative pillars: (i) innovation and management, (ii) healthcare and biomedical engineering and (iii) data analytics. My involvement in this program mainly includes: design of the educational curricula and lecturer recruitment, operational supervision, teaching, budget management.

Accepted conference papers

- L. Poulet, A. Vernay, B. Gonçalves, **B. Dalmas**, M. Vernay; “A multidisciplinary scientific outreach journal designed for and made by middle and high school students to bring research closer to the classroom”; International Conference on Environmental Systems, 2020
- B. Dalmas**, D. Lamy, A. Laurent, V. Clerc; “An optimization and pattern mining based approach for solving the RCPSP”, Metaheuristic International Conference, 2019
- N. Herazo-Padilla, V. Augusto, **B. Dalmas**, X. Xie, B. Bongue; “Screening a portfolio of pathologies by subject profiling and medical test rationing”, IEEE 15th International Conference on Automation Science and Engineering (CASE), 2019
- B. Dalmas**, D. Lamy, A. Laurent; “Approche de couplage optimisation–fouille de données pour le RCPSP » 19th congress of the french society for Operation Research and Decision Aid; 2018
- L. Poulet, A. Vernay, **B. Dalmas**, M. Vernay, P. Delpeuch, T. Sinn; “A Learning Method Based On a Mission To Mars for Primary School Children”; 68th International Astronautical Congress (IAC), 2017
- B. Dalmas**, N. Tax, S. Norre; “Heuristics for High-Utility Local Process Model Mining”; 3rd Workshop on Algorithms & Theories for the Analysis of Event Data (ATAED); 2017
- B. Dalmas**, P. Fournier-Viger, S. Norre; « TWINCLE: A Constrained Sequential Rule Mining Algorithm for Event Log”; 21th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES); 2017
- B. Dalmas**, M. Chabrol, S. Norre, S. Rodier; “KITE: a Process-based Methodology Applied to the Extraction of Routing Rules”; 20th World Congress of the International Federation of Automatic Control (IFAC), 2017
- M. Chabrol, **B. Dalmas**, S. Norre, S. Rodier; “A Process Tree-based Algorithm for the Detection of Implicit Dependencies”; IEEE 10th International Conference on Research Challenges in Information Science (RCIS); 2016

Accepted journals papers

- L. Dantas, **B. Dalmas**, R. Andrade, S. Hamacher, F. Bozza, « Predicting acquisition of carbapenem-resistant Gram-negative pathogens in intensive care units », *Journal of Hospital Infections*, 2019.
- B. Dalmas**, N. Tax, S. Norre, « Heuristic mining approaches for high-utility local process models », *Transactions on Petri Nets and Other Models of Concurrency*, 27-51, 2018.
- N. Tax, **B. Dalmas**, N. Sidorova, W.M.P. Van Der Aalst, S. Norre, « Interest-driven discovery of local process models », *Information Systems*, 105-117, 2018.

Submitted papers

- C. He, **B. Dalmas**, X. Xie, “ACBI: Alternating Clustering and Bayesian Inference for readmission risk prediction”, *IEEE 16th International Conference on Automation Science and Engineering (CASE)*
- N Herazo-Padilla, V Augusto, **B Dalmas**, X Xie, B Bongue; “A decision-tree-based Bayesian approach for chance-constrained health prevention budget rationing”; *IEEE Transactions on Automation Science and Engineering (T-ASE)*

A. Laurent, D. Lamy, **B. Dalmas**, V.Clerc, "Pattern mining-based pruning strategies in stochastic local searches for scheduling problems", International Transactions in Operational Research (ITOR)

Extra

2019	Recipient of the Young Researcher Prize of Clermont-Ferrand city
2018 - current	DECODER (co-founder) : association and scientific journal to promote collaboration between research and education. www.journal-decoder.fr
2017	Recipient of the Student & Entrepreneurship Prize + Winner of the Initiative Protect Contest for the " <i>Retour à l'Ecole</i> " project in Clermont-Ferrand (research & education collaboration)
2014	Junior Miage Concept Aix Marseille (co-founder) : Junior Entreprise specialized in programming and consulting-related project.

Language

French	Mother tongue
English	Fluent
Italian	Basics