Agni Orfanoudaki

| CONTACT INFORMATION | Park End St
University of Oxford
Oxford, OX1 1HP UK | ☎ +44 7738752562
✉ agni.orfanoudaki@sbs.ox.ac.uk
🌐 www.mit.edu/∼agniorf |

RESEARCH INTERESTS

Predictive and Prescriptive Analytics and their Applications, Healthcare, Algorithmic Insurance, Personalized Medicine.

ACADEMIC APPOINTMENTS

Saïd Business School, Oxford University, UK   September 2021
  Associate Professor of Operations Management
  Fellow in Management at Exeter College

Harvard Kennedy School, Cambridge, MA   June 2021 - Present
  Harvard Data Science Initiative Postdoctoral Fellow
  Mossavar-Rahmani Center for Business and Government

EDUCATION

Massachusetts Institute of Technology (MIT), Cambridge, MA   2016 - 2021
  Ph.D. Candidate in Operations Research
  Advisor: Dimitris Bertsimas
  GPA: 5.00/5.00

Athens University of Economics and Business (AUEB), Athens, Greece   2012 - 2016
  BSc. in Management Science and Technology
  Major on: Operations Research & Business Analytics
  GPA: 9.87/10 (1st of the class)

Technical University of Munich (TUM), Munich, Germany   2014 - 2015
  Visiting Student at the TUM School of Management
  GPA: 1.34 ("Excellent")

PUBLICATIONS (PUBLISHED OR UNDER REVIEW)

Machine Learning

Interpretable Clustering: An Optimization Approach
(with D. Bertsimas and H. Wiberg)
Machine Learning. 2020 Aug 16. - *NeurIPS*, Machine Learning for Health (2018).

Imputation of Clinical Covariates in Time Series
(with D. Bertsimas and C. Pawlowski)
Machine Learning. 2020 Oct 10. - *NeurIPS*, Machine Learning for Health (2018).

Optimal Survival Trees
(with D. Bertsimas, JW. Dunn, and E. Gibson)
To Appear in *Machine Learning*.

Healthcare & Personalized Medicine

Machine Learning Provides Evidence that Stroke Risk is Not Linear: The Non-Linear Framingham Stroke Risk Score
(with A. Mark, D. Bertsimas, C. Cadisch, E. Chesley, A. Nouh, and B. Stein)
PloS one. 2020 May 21;15(5):e0232414.

Machine Learning and Natural Language Processing Methods to Identify Ischemic Stroke, Acuity and Location from Radiology Reports
(with D. Bertsimas, M. Hutch, C. Ong, S. Smirnakis, R. Zhang, et al.)
PloS one. 2020 Jun 19;15(6):e0234908.

Personalized Treatment for Coronary Artery Disease Patients: A Machine Learning Approach
(with D. Bertsimas and RB. Weiner)
Health Care Management Science, 23(4), 482-506. 2020.

COVID-19 Mortality Risk Assessment: An International Multi-Center Study
(with D. Bertsimas, G. Lukin, L. Mingardi, B. Stellato, H. Wiberg, et al.)
PloS one. 2020 Dec 9;15(12):e0243262.

From Predictions to Prescriptions: A Data-Driven Response to COVID-19
(with D. Bertsimas, L. Boussioux, R. Cory-Wright, A. Delarue, V. Digalakis, et al.)
Health Care Management Science. 2021.
Winner of the 2020 William Pierskalla Best Paper Award.

Personalized Prescription of ACEI/ARBs for COVID-19 Patients
(with D. Bertsimas, A. Borenstein, L. Mingardi, O. Nohadani, H. Wiberg, et al.)
Health Care Management Science. 2021.

Ensemble Machine Learning for Personalized Antihypertensive Treatment
(with D. Bertsimas, A. Borenstein, and A. Dauvin)
To Appear in *Naval Research Logistics.* 2022.

Machine learning models for mitral valve replacement: A comparative analysis with the Society of Thoracic Surgeons risk score
(with D. Bertsimas, A. Giannoutsou, RC. Hagberg, and S. Hashim)
Journal of Cardiac Surgery 2021;37(1), 18-28.

Algorithmic Insurance

Pricing Algorithmic Insurance
(with D. Bertsimas)
Under Review.

BOOKS IN PREPARATION	**The Analytics Edge in Healthcare** (with D. Bertsimas & H. Wiberg) Dynamic Ideas Press to appear in 2021.

RESEARCH GRANTS	**Learning Features for the Adult Cardiac Surgery Database** Awarded by the Society of Thoracic Surgeons (STS). Lead the Analytics Component of the Collaboration. Participating Institutions: MIT, Massachusetts General Brigham, Hartford HealthCare.	2021-2023

HONORS AND AWARDS	Bayer Women in Operations Research Scholarship, INFORMS	2020
	William Pierskalla Best Paper Award, INFORMS	2020
	Theodore Vassilakis Graduate Research Fellowship, MIT	2019-2020
	1st Prize at Assistive Technology Hackathon, MIT	2019
	1st Prize at the Machine Learning Across Disciplines Challenge, MIT	2019
	1st Prize at MIT EarthHack	2019
	Student Award for Best Academic Performance, AUEB	2012-2016
	1st Prize at the McKinsey&Company Challenge, Athens	2015

TEACHING EXPERIENCE	**Saïd Business School**, Oxford, UK	
	Machine Learning for Business, MBA, *Class Design & Instructor*	Spring, 2022
	Technology and Operations Management, EMBA, *Instructor*	TT/HT 2022
	Technology and Operations Management, MBA, *Instructor*	MT 2022
	Technology and Operations Management, Undergraduate, *Guest Lecture*	MT 2022

Exeter College, Oxford, UK
General Management Tutorials, *Tutor*	MT/HT 2021-2022

Hartford HealthCare, Hartford, CT
The Analytics Edge in Healthcare, Executive Education, *Class Design & Instructor*	January, 2020

Massachusetts Institute of Technology, Cambridge, MA
Modeling with ML: From Algorithms to Applications, Graduate, *Guest Lecture*	Spring, 2021
Machine Learning Under a Modern Optimization Lens, Graduate, *Guest Lecture*	Fall, 2020
Introduction to Operations Management, MBA, *Teaching Assistant*	Spring, 2020
Computing in Optimization and Statistics, Graduate Class, *Instructor*	January, 2020
Software Tools for Business Analytics, Undergraduate, *Instructor*	January, 2020
Kaufman Teaching Certificate Program	Spring, 2019
The Analytics Edge, Executive MBA, *Teaching Assistant*	Spring, 2018-2019
Capstone Project, Master of Business Analytics, *Mentor*	Spring, 2017

Athens University of Economics and Business, Athens, Greece
Analysis of Networks and Graphs, *Teaching Assistant*	Spring, 2014

SELECTED TALKS

Pricing Algorithmic Insurance
European Technology and Operations Management Seminar	2021
London Business School Research Seminar	2021
Harvard Computing Society	2021
INFORMS Annual Meeting	2021
INFORMS Healthcare	2021
INFORMS Annual Meeting	2020

Personalized Predictions and Prescriptions for COVID-19 Patients: A ML Approach.
INFORMS Annual Meeting	2020
Cambridge University, COVID-19 Seminar	2020

Personalized Stroke Risk Estimation: The Impact of Missing Data Imputation.
INFORMS Annual Meeting	2020
Kellogg-Wharton, OM Workshop	2020
Conference on Neural Information Processing Systems (NeurIPS)	2018

Personalized Treatment for Coronary Artery Disease Patients: A ML Approach
Boston INFORMS Chapter	2020
American Heart Association Annual Meeting	2018
INFORMS Annual Meeting	2017
INFORMS Healthcare	2017

The Non-Linear Framingham Stroke Risk Score
International Stroke Conference	2020
INFORMS Healthcare	2019
INFORMS Annual Meeting	2018

Non-Linear Mortality and Morbidity Risk Score for Cardiac Surgery
Society of Thoracic Surgeons Annual Meeting	2020

Interpretable Clustering: An Optimization Approach
INFORMS Annual Meeting	2018-2019

Natural Language Processing from Radiology Reports for Ischemic Stroke Patients
INFORMS Annual Meeting   2019

INDUSTRY EXPERIENCE		

INDUSTRY EXPERIENCE

Swiss Re Group, Cambridge, MA USA   September 2017 - August 2019

Research Assistant: development and validation of data driven models for the estimation and evaluation of healthcare costs using claims records.

McKinsey & Company, Athens, Greece   January 2016 - July 2016

Business Analyst: business planning and process redesign for the manufacturing and banking sector.

SERVICE & OUTREACH

Reviewer for Management Science, INFORMS Journal on Optimization, NeurIPS, Health Care Management Science, PloS one, Machine Learning for Healthcare, Annals of Thoracic Surgery, Nature Scientific Reports.

INFORMS 2021 Pierskalla Award Co-Organizer   2021

Operations Research Seminar Co-Organizer   Fall, 2019

Vice President of the MIT Hellenic Student Association Board   2019 - 2021

INFORMS Officer at the Operations Research Center   2017

OTHERS

Languages: Greek (Native), English & Spanish (Fluent), German (Advanced), French (Intermediate)
Software Skills: Python, R, Julia, Matlab, Java, C++, HTML/CSS, XML, SQL, OPL