ASQ RRD Series Webinar: Stochastic Modelling

Presenter: Jorge Luis Romeu, PhD

Thursday, June 13, 2024 12:00 PM – 1:00 PM
(UTC-04:00) Eastern Time (US & Canada)

https://asq.webex.com/weblink/register/re8d5c5ee48376a4de25f6087feeca5f7

Abstract

Modeling a process or a system as a Markov Chain offers an excellent tool for its performance evaluation and for the study of different factors that can run it astray. In this talk we will present four examples of modeling Covid-19 problems as Markov Chains: (1) the trajectory of Covid-19 infected patients into an ICU, and up to their death; (2) assuming that the virus will infect a large part of the population, thus preventing further community spread and yielding Herd Immunization; (3) study of the Re-opening of Colleges under Covid-19 using a Markov Chain defined over a nine element state space that moves through a set of Transient states, eventually leading to two Absorbing States: Expulsion or Coursework; (4) assessing different patterns of vaccination, which may affect achieving (or not) Herd Immunity: polls suggesting that a significant number of people are not inclined to become vaccinated.

The entire research is discussed in the paper "Commented Summary of a Year of Work in Covid-19 Statistical Modeling", available from ResearchGate at: https://www.researchgate.net/publication/349008991_Commented_Summary_of_a_Year_of_Work_in_Covid-19_Statistical_Modeling

Biography

Jorge Luis Romeu is a Cuban ex-patriate, an Academic, a Researcher, a Consultant and an International Educator. Romeu has been a member of the Fulbright Speakers Roster since the year 2000, where he has worked as a Senior Speaker Specialist. He earned a Ph.D. in Industrial Engineering and Operations Research from Syracuse University (1990), and a "Licenciado en Matematicas, Especialista en Estadistica"; degree from the University of Havana, Cuba (1973). Romeu has fifty years of experience in Operations Research, Statistical Modeling and Data Analysis, Quality, Reliability and Continuous Improvement. Romeu retired Emeritus from the State University of New York, after 20 years teaching mathematics, statistics and optimization modeling for the SUNY Cortland and Utica campuses. Romeu is an Adjunct (Part Time) Professor in the Dept. of Mechanical and Aerospace Eng. Syracuse University, where he teaches graduate Industrial Statistics and Quality Engineering courses. He was, for 16 years (2003-2019), a Research Professor at Syracuse University, where he wrote proposals for government agencies, and won an Air Force Lab research award in 2008-2009. He was also a CASE Center Fellow. Read a summary of his research activities in his ResearchGate or in his LinkedIn pages.