Simulación con Simio

Pau Fonseca i Casas
Alberto García Villoria
Angel A. Juan

PID_00205185

Universitat Oberta de Catalunya

Pau Fonseca i Casas

Dr. Pau Fonseca is Associate Professor of Simulation in the Statistics and Operations Research of the Universitat Politècnica de Catalunya (UPC) and a esearcher of the Computing Laboratory of the Barcelona School of Informatics (LCFIB). He holds a Ph.D. in Statistics and Operations Research and a M.S. in Computer Science. He participates in several competitive projects related to simulation and technology transfer, like the simulation of the International Airport of Barcelona, or the simulation of Almirall Prodesfarma enterprise. His research interest includes environmental and social simulation, and formal representation of simulation models, interest that leads him to collaborate with the ITU-T in the definition of the new version of the Specification and Description Language (SDL-2010). His personal website is: http://www-eio.upc.es/ pau

Alberto García Villoria

Dr. Alberto García Villoria is an Associate Professor of Simulation of the Master in Computational and Mathematical Engineering at the Open University of Catalonia (UOC) and a Lecturer Professor in the Management Department at the Polytechnic University of Catalonia (UPC). He is also a Researcher at the Institute of Industrial and Control Engineering (IOC). Dr. Alberto García holds a Ph.D. in Advanced Automation and Robotics. He completed two predoctoral internships at University of Kent and Ecole Nationale Supérieure des Mines de Saint-Étienne and a postdoctoral internship at the Centre for Logistics & Heuristic Optimisation. His research focuses in the solution of sequencing problems and assembly line balacing problems, as well as the design of rural electrification projects. He has published over 50 peer-reviewed paper in international journals, books, and proceedings regarding these fields.

Angel A. Juan

Dr. Angel A. Juan is an Associate Professor of Applied Optimization, Simulation, and Data Analysis in the Computer Science Department at the Open University of Catalonia (UOC). He is also a Researcher at the Internet Interdisciplinary Institute (IN3). Dr. Juan holds a Ph.D. in Applied Computational Mathematics (UNED), an M.S. in Information Systems & Technology (UOC), and an M.S. in Applied Mathematics (University of Valencia). He completed predoctoral internships at Harvard University and at University of Alicante, as well as postdoctoral internships at the MIT Center for Transportation & Logistics, at the University of Southampton (UK), at LAAS-CNRS (France), and at the University of Natural Resources and Life Sciences (Austria). His research interests include Applied Simulation-Optimization (Simheuristics), as well as Educational Data Analysis & Mathematical e-Learning. He has published over 140 peer-reviewed papers in international journals, books and proceedings regarding these fields. His website is: http://ajuanp.wordpress.com

Primera edición: septiembre 2013
© Pau Fonseca i Casas, Alberto García Villoria, Angel A. Juan
Todos los derechos reservados
© de esta edición, FUOC, 2013
Av. Tibidabo, 39-43, 08035 Barcelona
Diseño: Manel Andreu
Realización editorial: Oberta UOC Publishing, SL

Ninguna parte de esta publicación, incluido el diseño general y la cubierta, puede ser copiada, reproducida, almacenada o transmitida de ninguna forma, ni por ningún medio, sea éste eléctrico, químico, mecánico, óptico, grabación, fotocopia, o cualquier otro, sin la previa autorización escrita de los titulares del copyright.

Contenidos

Módulo didáctico 1
Introducción a Simio
Alberto García Villoria, Angel A. Juan
1. Modelado de una cola
2. Modelado de un ATM

Módulo didáctico 2
Modelos básicos en Simio
Alberto García Villoria, Angel A. Juan
1. Control de acceso de pasajeros de un aeropuerto
2. Punto de check-in de un aeropuerto

Módulo didáctico 3
Modelos heterogéneos con Simio
Pau Fonseca i Casas, Angel A. Juan
1. Sistema de facturación de un aeropuerto
2. Sistema de facturación mejorado

Módulo didáctico 4
Gráficos *online* en Simio
Pau Fonseca i Casas, Angel A. Juan
1. El sistema de recogida de equipajes

Módulo didáctico 5
Flujos en redes con Simio
Angel A. Juan
1. Centro de mantenimiento e inspección de aeronaves
2. Modelado de colas balanceadas
3. Modelado de tareas secuenciales (Job-Shops)

Módulo didáctico 6
Objetos avanzados en Simio
Angel A. Juan
1. Mezcladores y separadores
2. Modelado de caminos bidireccionales
3. Modelado de cintas transportadoras convergentes