



Final Program of the 12th International Workshop on Applied Modelling & Simulation

October 30-31, 2019, www.liophant.org/wams

NUSS Kent Ridge Guild House, 9 Kent Ridge Drive, Singapore

WAMS2019 is organized in synergy with **AsiaSim** & **STRATEGOS**

Wednesday, October 30TH

845-0900 AsiaSim & WAMS OPENING, Dalvey & Evans Rooms

0900-1000 1st Day Keynote Speeches

1000-1030 Tea/Coffee Break (WAMS included)

1030-1200 AsiaSim Best Paper Session

1200-1330 AsiaSim & WAMS Lunch (WAMS included)

1400-1730 STRATEGOS Workshop: a New Way to Succeed (Evans)

1800-1930 AsiaSim & WAMS Welcome Cocktail (WAMS included)

2100-2230 Night Drink at Long Bar, Raffles Hotel (no host)

Thursday, October 31ST

0910-1000 2nd Day Keynote Speeches

100-1030 Tea/Coffee Break (WAMS included)

1030-1200 WAMS Evans Room, Session I

Chairs: R.Sburlati, DICCA & I.Arizona, Okayama University

Job Shop Rescheduling with Lot Splitting under Multiple Interruptions

T.Okamoto, Y.Yanagawa, I.Arizona, Graduate School of Natural Science & Technology, Okayama Univ., Japan (pg.14)

Scheduling Multiple Lift Vehicles in a Common Shaft in Automated Vehicle Storage and Retrieval Systems

A.Habl, V.Balducci, J.Fottner, Technical University of Munich, Germany (pg.39)

Simulation Modeling: Object Approach vs. Relational Approach

P.Pawlewski, Faculty of Eng.Management, Poznan Univ.of Technology, Poland (pg.61)

Ground Source Heat Pumps Cost Analysis in Moderate Climate

L.Aresti, P.Christodoulides, V.Messaritis, G.A.Florides, Cyprus Univ. of Tech. (pg.35)

Computational Investigation on Effect of Various Parameters of a Spiral Ground Heat Exchanger

L.Aresti, P.Christodoulides, L.Lazari, G.A.Florides, Cyprus Univ.of Tech.(pg.30)

1200-1330 AsiaSim & WAMS Lunch (WAMS included)

Thursday, October 31ST

1330-1530 WAMS Evans Room, Session II

Chairman: A.G.Bruzzone, Simulation Team & L.Aresti, Cyprus Univ.of Technology

Strategic Engineering Models devoted to couple Simulation, Data Analytics & Artificial Intelligence in Liquid Bulk Logistics

A.G.Bruzzone, DIME, M.Massei, SIM4Future, G.Fabbrini, M.Gotelli, Simulation Team, R.Sburlati, DICCA, Italy (pg.72)

Proposal on Network Exploration to avoid Closed Loops

T. Yamaguchi, Graduate School of Nat.Science & Technology Okayama Univ., T.Sakiyama, Science & Engineering Fac., Soka Univ., I.Arizona, Okayama Univ. (pg.7)

Proposed Framework Development for E-Government Implementation in Nepal

P.Kharel, M.Sharma, Y.Shrestha, Kathmandu University DoCSE, Dhulikhel, Nepal (pg.54)

A Novel Firefly Algorithm for Multimodal Optimization

M.Kondo, Graduate School of Natural Science & Technology Okayama Univ., T.Sakiyama, Science & Eng. Fac., Soka Univ., I.Arizona, Okayama Univ., Japan (pg.23)

1530-1600 Tea/Coffee Break (WAMS included)

1600-1730 WAMS Evans Room, Session III

Chairman: A.Solis, York University, R.Cianci, DIME

Adaptive Algorithms for Optimal Budget Allocation with an Application to the Employment of Imperfect Sensors

M.Kress & R.Szechtman, NPS, USA, E.Yücesan, INSEAD, France (pg.1)

A Review of Recent Research Involving Modeling and Simulation in Disaster and Emergency Management

Adriano Solis, York University, Canada (pg.78)

A Continuous Simulation Model of the Diffusion of Toxic Gases in a Tunnel

R.Cianci, A.Alessandri, Genoa Univ., Kirill Sinelshchikov, Simulation Team, (pg.67)

Simulation of Human Pioneering on Mars

M.J.D. Bonato, A.B. Carneiro, L.M.A. Fadel, R.Y. Koga, A.L.B.V. Rodrigues, J.L.A. Silva, T.M. Teixeira, G. Todesco, FACENS - Sorocaba Engineering College, São Paulo, Brazil (pg.45)

1900-2200 Gala Dinner at S.E.A. Aquarium, Resorts World Sentosa (WAMS included)

Pease note that from suggested Accommodation(Park Avenue Rochester Hotel & Suite) there is a free shuttle service to NUSS for ASIASIM & WAMS

Venues in Singapore:

WAMS, AsiaSim & STRATEGOS Workshop Welcome Cocktail (WAMS Included)

@ NUSS Kent Ridge Guild House, National University of Singapore, 9 Kent Ridge Drive

STRATEGOS & WAMS Night Drink (No Host)

@ Long Bar, Raffles Hotel Raffles Arcade, 328 North Bridge Rd,

WAMS & AsiaSim Gala Dinner (WAMS Included)

@S.E.A. Aquarium, Resorts World, 8 Sentosa Gateway, Sentosa Island

WAMS & AsiaSim Lunches & Tea/Coffee Breaks during the Conferences are included for attendees during October 30 & 31

Further details available on www.liophant.org/wams

APPENDIX 1: VENUE ACCESS

From Ayer Rajah Expressway (AYE), exit and go onto Clementi Road towards NUS. Turn left into NUS Entrance B and turn right onto Kent Ridge Drive at the first junction. NUSS Kent Ridge Guild House (KRGH) is located along Kent Ridge Drive.

LOCAL DELEGATES DRIVING TO KRGH

Parking charges at Car Park 15		
Day of Week	Operation Hours	Charges (per minute)
Monday to Friday	0830 - 1930	0.0214
Saturday	0830 - 1700	0.0214
Free parking at all other times		

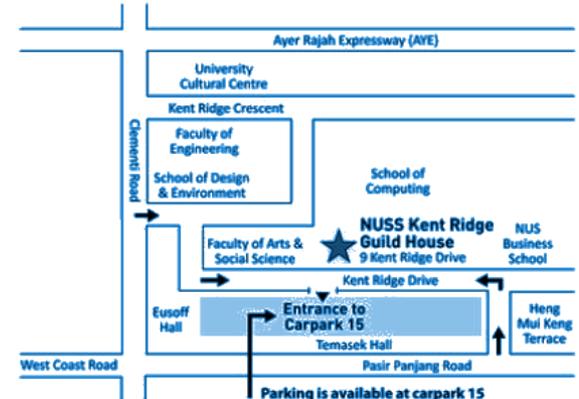
Car park coupons for parking at NUS Car Park 15 are available at \$3.60 (up to 4 hours parking) and \$4.80 (all-day parking) from our reception counter, Monday to Friday, Saturday before 5pm.

Enjoy free parking on Saturday after 5pm, Sunday and public holidays! NUS Carpark 15 is conveniently located just across the road from KRGH.

SHUTTLE BUS A1 TRAVEL ROUTE

Kent Ridge MRT Station → NUH → LT 29 → University Hall → Opposite Staff Club → Yusof Ishak House → Central Library → LT 13 → AS 5 (Stop to alight)

Map of Kent Ridge Guild House | 9 Kent Ridge Drive | Singapore 119241



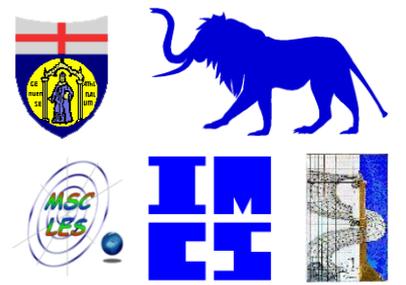
- BY BUS**
 Kent Ridge Terminal : 10, 33, 95, 151, 151E, 180, 200
 Heng Mu Keng Terrace : 10, 30, 30e, 51, 143, 183, 188, 200
 Bus Shuttle Service : A1, B, D2, BFC1
- BY MRT**
 Nearest Station: Kent Ridge
- BY CAR**
 Park at carpark 15 from Clementi Road / Pasir Panjang Road

Visit the following website for the direction guide to NUSS Kent Ridge Guild House using public transport.
<http://www.pathwaze.org/guides/nusskr/>

NUSS
The Graduate Club

A special Panel and Student Competition on Complex System will be organized on 1400-1700, Friday, November 1, at James Cook University, Singapore, jointly with STRATEGOS, Genoa University, for getting an invitation please contact massei@itim.unige.it for details

WAMS: 12 Years of Successes around the World



Athens 2020

See you next Year, please visit:
www.liophant.org/conferences