

NUNO ANTUNES RIBEIRO

Singapore University of Technology and Design ◊ Engineering Systems and Design
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ACADEMIC EXPERIENCE

Assistant Professor, Engineering Systems and Design *2019 - 2024*
Singapore University of Technology and Design (SUTD)

EDUCATION

PhD in Transportation Systems, University of Coimbra Portugal *2014 - 2019*
Visiting Scholar - Massachusetts Institute of Technology (MIT) *2016*
Visiting Scholar - Carnegie Mellon University (CMU) *2017*
BSc and MSc in Civil Engineering , University of Coimbra Portugal *2007 - 2013*

TEACHING EXPERIENCE

Instructor, Singapore University of Technology and Design

10.022 Modelling Uncertainty *2023*
Undergraduate Course (Term 3); Class Size 89 students

40.015 Simulation Modelling and Analysis *2019 - 2023*
Undergraduate Course (Term 6); Class Size 50 students

40.321 Airport Systems Modelling and Simulation *2020 - 2023*
Undergraduate Course (Term 7); Class Size 13 students

40.614 Metaheuristic Optimization *2022*
Graduate Course; Class Size 19 students

01.400 Capstone *2021*
Undergraduate Course (Term 7); Supervising 37 students

01.017 SHARP Honours Session *2023*
Undergraduate Course (Term 3); Class Size 15 students

01.020 Design Thinking Project III *2023*
Undergraduate Course (Term 3); Supervising 89 students

RESEARCH FUNDING

Principal Investigator, Civil Aviation Authority of Singapore
"Airfield and Airspace Management", \$720,000 *2022 - 2024*

Co-Principal Investigator, National Research Foundation Singapore
"Rapid Evaluation Tools Within the Intelligent Optimisation Platform", \$472,132 *2021 - 2024*

Principal Investigator, National Research Foundation Singapore
"Resilient Airspace Operations for Singapore", \$398,722 *2021 - 2023*

Principal Investigator, Civil Aviation Authority of Singapore
"Airfield Management and Economics", \$520,145 *2019 - 2021*

Principal Investigator, SUTD Startup Research Grant
"Airport Congestion Mitigation", \$100,000 *2020 - 2022*

Research Assistant , European Regional Development Funds "Airport Slot Allocation Process, Advancing Current Practices and Guidelines"	<i>2018 - 2021</i>
Research Assistant , European Regional Development Funds "Energy and Mobility for Sustainable Regions, New Urban Sustainable Mobility"	<i>2014</i>
Research Consultant , Rch. Centre for Territory Transports and Env. (CITTA) - Valorsul S.A "Study of transportation costs of the Valorsul Solid Waste Management System"	<i>2013</i>

HONORS AND AWARDS

Winner, Best Student Presentation (Wayne Ng), INFORMS, Aviation Applications Section	<i>2023</i>
Awarded with STaRs Program Grant, University of Bergamo	<i>2022</i>
Winner, TSL Cross-region Collaborative Grant, INFORMS	<i>2021</i>
Runner-Up, Best Paper Award, Air Transport Research Society (ATRS)	<i>2021</i>
Winner, Best Paper Award, INFORMS, Aviation Applications Section	<i>2020</i>
Winner, Best PhD Dissertation Award, INFORMS, Aviation Applications Section	<i>2019</i>
Winner, Anna Valicek Silver Medal, AGIFORS	<i>2018</i>
Runner-Up, Best Student Presentation, INFORMS, Aviation Applications Section	<i>2017</i>
PhD Scholarship, MIT-Portugal Program	<i>2015 -2019</i>
3% Best Student Award, University of Coimbra	<i>2013</i>

PUBLICATIONS

- [1] López-Ramos, F., Benita, F. **Ribeiro, N. A.** (2024). A Novel Decision Support Framework for Multi-Objective Aircraft Routing Problem. Under Review
- [2] Ng W., **Ribeiro, N. A.**, Jorge, D., (2024). An Optimization Approach for Solving the Terminal Airspace Scheduling Problem. Under Review
- [3] **Ribeiro, N. A.**, Tay J., Ng W., & Birolini, S. (2023). Delay Predictive Analytics for Airport Capacity Management. Under Review
- [4] Pouget, L., **Ribeiro, N. A.**, Odoni, A. R., & Antunes, A. P. (2023). How do airlines react to slot displacements? Evidence from a major airport. *Journal of Air Transport Management*, 106, 102300.
- [5] Birolini, S., Jacquillat, A., Schmedeman, P., & **Ribeiro, N. A.** (2023). Passenger-Centric Slot Allocation at Schedule-Coordinated Airports. *Transportation Science*.
- [6] Jorge, D., **Ribeiro, N. A.** & Antunes A.P. (2021) "Towards a decision-support tool for airport slot allocation: application to Guarulhos (Sao Paulo, Brazil)". *Journal of Air Transport Management*, 93, 102048
- [7] **Ribeiro, N. A.**, Jacquillat, A.,& Antunes, A. P. (2019). A Large-Scale Neighborhood Search Approach to Airport Slot Allocation. *Transportation Science*, 53(6), 1772-1797.
- [8] **Ribeiro, N. A.**, Jacquillat, A., Antunes, A. P., & Odoni, A. (2019). Improving slot allocation at Level 3 airports. *Transportation Research Part A: Policy and Practice*, 127, 32-54.
- [9] **Ribeiro, N. A.**, Jacquillat, A., Antunes, A. P., Odoni, A. R., & Pita, J. P. (2018) "An optimization approach for airport slot allocation under IATA guidelines", *Transportation Research Part B: Methodological*, 112, 132-156

[10] Tralhão, L., Sousa N., **Ribeiro, N. A.**, & Coutinho-Rodrigues, J. (2014) "Design of bicycling suitability maps for hilly cities", Proceedings of the ICE - Municipal Engineer, 168(2), 96-105

PEER-REVIEWED CONFERENCE PUBLICATIONS

[1] Jorge, D., **Ribeiro, N. A.** & Antunes A.P. "Towards a decision-support tool for airport slot allocation". Proceedings of the TSL Second Triennial Conference, 2020

[2] **Ribeiro, N. A.** N. A, Tralhao, L., Rodrigues, J. C., and Sousa, N. "Building a bicycle suitability map for Coimbra". In Proceedings of the Energy for Sustainability Multidisciplinary Conference EfS, 2013.

INVITED TALKS

ATRS 2023 - Hub Competition and Demand Modeling in Long-haul Aviation Markets, (Kobe, Japan 2023)

Seminar Series, Delft University of Technology, Air Transport and Operations, Faculty of Aerospace Engineering (Delft, Netherlands 2023)

GARS Research Seminar on "How to make slot allocation work better?", University of Applied Science Amsterdam (Amsterdam, Netherlands 2023)

Seminar Series, Bergamo University, Department of Management, Information and Production Engineering (Bergamo, Italy 2022)

INFORMS Annual Meeting 2022 - A Modelling Approach to Optimize Slot Limits in Airport Demand Management (Indianapolis, 2022)

INFORMS Annual Meeting 2021 - Optimizing the Declared Capacity at Slot Coordinated Airports (Anaheim, USA /Virtual, 2021)

Seminar Series, The Hong Kong Polytechnic University, Department of Logistics and Maritime Studies (Hong Kong/Virtual 2021)

IFORS 2021 - A Passenger-centric Approach to Airport Slot Allocation (Seoul/Virtual 2021)

ATRS 2021 - Passenger-centric Slot Allocation at Schedule-coordinated Airports (Sydney/Virtual, 2021)

IORA 2021 - Predictive and Prescriptive Analytics to Airport Slot Allocation (Singapore, 2021)

EURO 2021 - Passenger-centric Slot Allocation at Schedule-coordinated Airports, (Athens/Online, 2021)

CANSO Webinar, ATM R&D series - Understanding Convective Weather Events and Their Impact on Air Traffic Management, (Online, 2020)

2020 INFORMS Annual Meeting - A Passenger-Centric Approach to Airport Slot Allocation, (Online, 2020)

2019 INFORMS Annual Meeting - Slot Allocation: Algorithms and Implementation at Guarulhos Airport, (Seattle, USA, 2019)

2018 INFORMS Annual Meeting - A Large Neighborhood Search Approach to Airport Slot Allocation, (Phoenix, USA, 2018)

AGIFORS 58th Annual Symposium - An Optimization Approach for Airport Slot Allocation Under IATA Guidelines, (Tokyo, Japan, 2018)

OR60 Annual Conference - Optimizing Slot Allocation at Level 3 airports, (Lancaster, UK, 2018)

2017 INFORMS Annual Meeting - An Optimization Approach for Airport Slot Allocation Under IATA Guidelines, (Houston, USA, 2017)

21st ATRS World Conference - An Optimization Approach for Airport Slot Allocation Under IATA Guidelines, (Antwerp, Belgium, 2017)

2016 INFORMS Annual Meeting - A Model for Airport Schedule Coordination based on the IATA Guidelines, (Tennessee, USA, 2016)

hEART 5th Symposium - An Airport Slot Allocation Model Compliant with IATA Guidelines, (Delft, Netherlands, 2016)

STUDENTS SUPERVISION

PhD supervisor - Wayne Ng, Jetanat Datephanyawat, Nutchanon Suvittawat *2021-2024*

MEng supervisor - Xie Peining , Jordan Tay *2021-2024*

SHARP supervisor - Vanessa Chia Yun Yao, Tran Nguyen Bao Long, Liu Renhang, Umali Mike Guil Anonuevo, Xie Jiacheng *2020-2022*

Internship supervisor, Mark Feng Zhengqing, Richard Huang *2020-2021*

UROP supervisor - more than 15 students *2020-2024*

UNIVERSITY SERVICES

Conducting Faculty Interviews *2019-2024*

Conducting Admissions Interviews *2020-2024*

Participation in SUTD Outreach Activities *2019-2024*

Developed New SHARP Honours Session Module, *2023*

Developed New Graduate Course: 40.614 Metaheuristic Optimization, *2022*

Developed New Undergraduate Course: 40.321 Airport Systems Modelling and Simulation, *2019*

PhD thesis committee member, Ng Jia Yi, Vu Trung Dung, Darryl Teo, Meijing Zhang *2020-2024*

M.Sc. independent reviewer, Pei Jinling, Zeng Xinyu, Teresa Liew Si Min, Justin Chee *2021-2024*

Capstone project scoping committee member *2020-2022*

Initiated the process of signing a Memorandum of Understanding (MOU) between SUTD and Bergamo University *2022*

Conducting Transfer Credit Approvals *2024*

EXTERNAL SERVICES

Treasurer/Secretary – Aviation Applications Sections, INFORMS *2023-2024*

Early Career Editorial Board Member, Transp. Research Part C: Emerging Technologies *2021-2024*

Communication Chair – Aviation Applications Sections, INFORMS *2021-2022*

Committee Chair Best Paper Award – Aviation Applications Sections, INFORMS *2020-2021*

Member of the Evaluation Committee for the Anna Valicek Award, AGIFORS *2021*

Member of the Evaluation Committee for the Ken Wang Award, AGIFORS *2021*

Cluster Chair – Aviation Applications Sections, INFORMS *2019-2020*

Session Chair – INFORMS 2019 (USA), INFORMS 2020 (USA), IFORS 2021 (South Korea) *2019-2021*

Memberships: Institute for Operations Research and the Management Sciences (INFORMS), Transportation Science and Logistics (TSL), Aviation Applications Section of INFORMS (AAS), Civil Air Navigation Services Organization (CANSO), Singapore Institute of Aerospace Engineers (SIAE), Research Centre for Territory Transports and Environment (CITTA)

Reviewer for major academic journals: European Journal of Operations Research; Journal of Aerospace Technology and Management; Mathematical Problems in Engineering; Transportation Research Part B: Methodological; Transportation Research Part C: Emerging Technologies; Transportation Research Part D: Transport and Environment; Transportation Research Part E: Logistics and Transportation Review, Transportation Science *2018-2022*

OTHERS

Languages: Portuguese (Native); English (Advanced); Spanish (Intermediate); French (Basic)

Computer Skills: GAMS; AMPL; MOSEL; Matlab; R; Javascript; CAST-Aviation; Simio; ArcGIS; SPSS; AutoCAD

Extracurricular Activities: Traveling, Football, Piano, History