WYNTER Laura

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Education

PhD, ENPC (Ecole Nationale des Ponts et Chaussees), France, 1996

Master of Science, Massachusetts Institute of Technology, United States of America, 1992

Bachelor of Science, Massachusetts Institute of Technology, United States of America, 1990

Academic Appointments

Associate Professor of Computer Science (Practice), School of Computing and Information Systems, SMU, Jul 2025 - Present

RESEARCH

Publications

Journal Articles [Refereed]

MPA-IBM project SAFER: Sense-making analytics for maritime event recognition, by YEO, Gavin; LIM, Shiau Hong; WYNTER, Laura; HASSAN, Hifaz. (2019). *INFORMS Journal on Applied Analytics, 49* (4), 269-280. https://doi.org/10.1287/inte.2019.0997 (Published)

Accurate and cost-effective traffic information acquisition using adaptive sampling: Centralized and V2V schemes, by LIM, Shiau Hong; CHIA, Yeow Khiang; WYNTER, Laura. (2018). *Transportation Research Part C: Emerging Technologies, 23* 61-80. https://doi.org/10.1016/j.trpro.2017.05.005 (Published)

Accurate and cost-effective traffic information acquisition using adaptive sampling: Centralized and V2V schemes, by LIM, Shiau Hong; CHIA, Yeow Khiang; WYNTER, Laura. (2018). *Transportation Research Part C: Emerging Technologies, 94* 99-120. https://doi.org/10.1016/j.trc.2017.10.017 (Published)

A Nash equilibrium formulation of a tradable credits scheme for incentivizing transport choices: From next-generation public transport mode choice to HOT lanes, by LAHLOU, Salem; WYNTER, Laura. (2017). *Transportation Research Part B: Methodological, 101* 185-212. https://doi.org/10.1016/j.trb.2017.03.014 (Published)

Sensor placement with time-to-detection guarantees, by JABARI, Saif Eddin; WYNTER, Laura. (2016). *EURO Journal on Transportation and Logistics, 5* (4), 415-433. https://doi.org/10.1007/s13676-015-0086-4 (Published)

Stability of transportation networks under adaptive routing policies, by BOYER, Sebastien; BLANDIN, Sebastien; WYNTER, Laura. (2015). *Transportation Research Part B: Methodological, 81* 886-903. https://doi.org/10.1016/j.trb.2015.09.004 (Published)

Stability of transportation networks under adaptive routing policies, by BOYER, Sebastien; BLANDIN, Sebastien; WYNTER, Laura. (2015). *Transportation Research Procedia, 7* 578-597. https://doi.org/10.1016/j.trpro.2015.06.030 (Published)

Rejoinder: Real-time road traffic forecasting using regime-switching space-time models and adaptive lasso, by KAMARIANAKIS, Yiannis; SHEN, Wei; WYNTER, Laura. (2012). *Applied Stochastic Models in Business and Industry, 28* (4), 322-323. https://doi.org/10.1002/asmb.1941 (Published)

Real-time road traffic forecasting using regime-switching space-time models and adaptive LASSO, by KAMARIANAKIS, Yiannis; SHEN, Wei; WYNTERA, Laura. (2012). *Applied Stochastic Models in Business and Industry, 28* (4), 297-315. https://doi.org/10.1002/asmb.1937 (Published)

A new one-level convex optimization approach for estimating origin-destination demand, by SHEN, Wei; WYNTER, Laura. (2012). *Transportation Research Part B: Methodological, 46* (10), 1535-1555. https://doi.org/10.1016/j.trb.2012.07.005 (Published)

Real-time traffic estimation using data expansion, by LEDERMAN, Roger; WYNTER, Laura. (2011). *Transportation Research Part B: Methodological, 45* (7), 1062-1079. https://doi.org/10.1016/j.trb.2011.05.024 (Published)

Real-time road traffic prediction with spatio-temporal correlations, by MIN, Wanli; WYNTER, Laura. (2011). *Transportation Research Part C: Emerging Technologies, 19* (4), 606-616. https://doi.org/10.1016/j.trc.2010.10.002 (Published)

Revenue management model for on-demand IT services, by LIU, Tieming; METHAPATARA, Chinnatat; WYNTER, Laura. (2010). *European Journal of Operational Research, 207* (1), 401-408. https://doi.org/10.1016/j.ejor.2010.04.024 (Published)

Revenue management in business services, by DIETRICH, Brenda; PALEOLOGO, Giuseppe A.; WYNTER, Laura. (2008). *Production and Operations Management, 17* (4), 475-480. https://doi.org/10.3401/poms.1080.0044 (Published)

Competitive equilibrium in e-commerce: Pricing and outsourcing, by DUBE, Parijat; LIU, Zhen; WYNTER, Laura; XIA, Cathy. (2007). *Computers and Operations Research, 34* (12), 3541-3559. https://doi.org/10.1016/j.cor.2006.01.019 (Published)

Parameter inference of queueing models for IT systems using end-to-end measurements, by WYNTER, Laura; XIA, Cathy H.; ZHANG, Fan. (2006). *Performance Evaluation, 63* (1), 36-60. https://doi.org/10.1016/j.peva.2004.12.001 (Published)

A survey on networking games in telecommunications, by ALTMAN, E.; BOULOGNE, T.; EL-AZOUZI, R.; JIMÉNEZ, T.; WYNTER, L.. (2006). *Computers and Operations Research, 33* (2), 286-311. https://doi.org/10.1016/j.cor.2004.06.005 (Published)

Optimal location of intermodal freight hubs, by RACUNICA, Illia; WYNTER, Laura. (2005). *Transportation Research Part B: Methodological, 39* (5), 453-477. https://doi.org/10.1016/j.trb.2004.07.001 (Published)

Optimizing proportionally fair prices, by WYNTER, Laura. (2004). *Telecommunication Systems, 27* (1), 67-83. https://doi.org/10.1023/B:TELS.0000032944.40946.a6 (Published)

A new look at the multiclass network equilibrium problem, by MARCOTTE, Patrice; WYNTER, Laura. (2004). *Transportation Science, 38* (3), 282-292. https://doi.org/10.1287/trsc.1030.0039 (Published)

Editorials

Guest editorial: Special issue on game theory in communication networks, by ALPCAN, Tansu; EL-AZOUZI, Rachid; SHIMKIN, Nahum; WYNTER, Laura. (2011). *Telecommunication Systems, 47* (1-2), 1-2. https://doi.org/10.1007/s11235-010-9297-z (Published)

Books (Refereed)

Federated reinforcement learning for portfolio management by YU, Pengqian; WYNTER, Laura; LIM, Shiau Hong. (2022). Cham: Springer. https://doi.org/10.1007/978-3-030-96896-0_21 (Published)

Analysis of a yield management model for on demand computing centers by HAYEL, Yezekael; WYNTER,

Laura; DUBE, Parijat. (2004). Cham: Springer. https://doi.org/10.1007/1-4020-8155-3_20 (Published)

Book Chapters

Personalized, robust federated learning with fed+, by YU, Pengqian; KUNDU, Achintya; WYNTER, Laura; LIM, Shiau Hong. (2022). In LUDWIG, Heiko; BARACALDO, Nathalie (Ed.), *Federated learning: A comprehensive overview of methods and applications* (pp. 99-123) Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-96896-0_5 (Published)

Conference Proceedings

Transformer models with explainability for IT telemetry and business events, by LIM, Shiau Hong; WYNTER, Laura. (2024.0). *Proceedings of the 2024 IEEE International Conference on Software Services Engineering (SSE), Shenzhen, China, July 7-13*
, (pp. 130-140) Los Alamitos, CA: IEEE Computer Society. https://doi.org/10.1109/SSE62657.2024.00030 (Published)

On efficient object-detection NAS for ADAS on edge devices, by GUPTA, Diksha; LEE, Rhui Dih; WYNTER, Laura. (2024.0). *Proceedings of the 2024 IEEE Conference on Artificial Intelligence (CAI), Singapore, June 25-27*
, (pp. 1005-1010) Piscataway, NJ: IEEE. https://doi.org/10.1109/CAI59869.2024.00183 (Published)

Multimodal deep learning with boosted trees for edge inference, by CHONG, Penny; WYNTER, Laura; CHAUDHURY, Bharathi. (2023.0). *Proceedings of the 2023 IEEE International Conference on Data Mining Workshops (ICDMW), Shanghai, China, December 1-4,* (pp. 99-108) Los Alamitos, CA: IEEE Computer Society. https://doi.org/10.1109/ICDMW60847.2023.00021 (Published)

M3: Towards efficient mixed machine learning model co-location on constrained edge devices, by BATHEN, Luis Angel D.; BABATUNDE, Simeon; LEE, Rhui Dih; KUNDU, Achintya; WYNTER, Laura. (2023.0). *Proceedings of the 2023 IEEE Military Communications Conference, MILCOM 2023, Boston, MA, USA, October 30 - November 3,* (pp. 39-44) Piscataway, NJ: IEEE. https://doi.org/10.1109/MILCOM58377.2023.10356363 (Published)

Are GNNs the right tool to mine the blockchain? The case of the Bitcoin generator scam, by YUEN, Zhikun; BRANCO, Paula; CHEW, Aaron; JOURDAN, Guy-Vincent; LIM, Fabian; WYNTER, Laura. (2023.0). *Proceedings of the 10th IEEE International Conference on Data Science and Advanced Analytics, DSAA 2023, Thessaloniki, Greece, October 9-13,* Pistacataway: IEEE. https://doi.org/10.1109/DSAA60987.2023.10302516 (Published)

Transfer-once-for-all: AI model optimization for edge, by KUNDU, Achintya; WYNTER, Laura; LEE, Rhui Dih; BATHEN, Luis Angel. (2023.0). *Proceedings of the 7th IEEE International Conference on Edge Computing and Communications, EDGE 2023, Chicago, IL, USA, July 2-8,* (pp. 26-35) Los Alamitos, CA: IEEE Computer Society. https://doi.org/10.1109/EDGE60047.2023.00017 (Published)

Neural-progressive hedging: Enforcing constraints in reinforcement learning with stochastic programming, by GHOSH, Supriyo; WYNTER, Laura; LIM, Shiau Hong; NGUYEN, Duc Thien. (2022.0). *UAI 2022: Proceedings of the 38th Conference on Uncertainty in Artificial Intelligence, Eindhoven, August 1-5,* (pp. 707-717) Eindhoven: Association for Uncertainty in Artificial Intelligence (AUAI). https://proceedings.mlr.press/v180/ghosh22a.html (Published)

Order constraints in optimal transport, by LIM, Fabian; WYNTER, Laura; LIM, Shiau Hong. (2022.0). *Proceedings of the 39th International Conference on Machine Learning, Baltimore, Maryland, July 17-23,* (pp. 13313-13333) Baltimore: ML Research Press. (Published)

Robustness and personalization in federated learning: A unified approach via regularization, by KUNDU, Achintya; YU, Pengqian; WYNTER, Laura; LIM, Shiau Hong. (2022.0). *Proceedings of the 6th IEEE International Conference on Edge Computing and Communications, EDGE 2022, Barcelona, Spain, July 10-16,* (pp. 1-11) Los Alamitos, CA: IEEE Computer Society. https://doi.org/10.1109/EDGE55608.2022.00014 (Published)

Q2R: A query-to-resolution system for natural-language queries, by LIM, Shiau Hong; WYNTER, Laura. (2022.0). *Proceedings of the 2022 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies: Industry Track, Seattle, Washington, July 10-15,* (pp. 353-361) Kerrville, TX: Association for Computational Linguistics (ACL). (Published)

Efficient reinforcement learning in resource allocation problems through permutation invariant multi-task learning, by CAI, Desmond; LIM, Shiau Hong; WYNTER, Laura. (2021.0). *Proceedings of the 60th IEEE Conference on Decision and Control, CDC 2021, Austin, TX, USA, December 14-17,* (pp. 2270-2275) Piscataway, NJ: IEEE. https://doi.org/10.1109/CDC45484.2021.9683491 (Published)

Decentralized deterministic multi-agent reinforcement learning, by GROSNIT, Antoine; CAI, Desmond; WYNTER, Laura. (2021.0). *Proceedings of the 60th IEEE Conference on Decision and Control, CDC 2021, Austin, TX, December 14-17,* (pp. 1548-1553) Piscataway, NJ: IEEE. https://doi.org/10.1109/CDC45484.2021.9683356 (Published)

A deep ensemble method for multi-agent reinforcement learning: A case study on air traffic control, by GHOSH, Supriyo; LAGUNA, Sean; LIM, Shiau Hong; WYNTER, Laura; POONAWALA, Hasan. (2021.0). *Proceedings of the Thirty-First International Conference on Automated Planning and Scheduling, Guangzhou, China, 2021 August 2-13,* (pp. 468-476) Guangzhou, Virtual: AAAI. https://doi.org/10.1609/icaps.v31i1.15993 (Published)

Variational Bayesian inference for crowdsourcing predictions, by CAI, Desmond; NGUYEN, Duc Thien; LIM, Shiau Hong; WYNTER, Laura. (2020.0). *Proceedings of the 2020 59th IEEE Conference on Decision and Control (CDC), Jeju Island, Korea, December 14-18* , (pp. 3166-3172) Virtual, Jeju Island: Institute of Electrical and Electronics Engineers Inc. https://doi.org/10.1109/CDC42340.2020.9304064 (Published)

Combining micro and macro features for online pattern-of-life movement prediction, by LIM, Shiau Hong; POONAWALA, Hasan; WYNTER, Laura. (2019.0). *Proceedings of the 19th IEEE International Conference on Data Mining Workshops, ICDMW 2019, Beijing, China, November 8-11,* (pp. 587-594) Washington, DC: IEEE Computer Society. https://doi.org/10.1109/ICDMW.2019.00089 (Published)

Towards robust resNet: A small step but a giant leap, by ZHANG, Jingfeng; HAN, Bo; WYNTER, Laura; LOW, Bryan Kian Hsiang; KANKANHALLI, Mohan. (2019.0). *Proceedings of the Twenty-Eighth International Joint Conference on Artificial Intelligence (IJCAI-19), Macao, China, August 10-16 ,* (pp. 4285-4291) Macao: IJCAI. https://doi.org/10.24963/ijcai.2019/595 (Published)

A probabilistic model of the bitcoin blockchain, by JOURDAN, Marc; BLANDIN, Sebastien; WYNTER, Laura; DESHPANDE, Pralhad. (2019.0). *Proceedings of the 32nd IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops, CVPRW 2019, Long Beach, CA, USA, June 16-17,* (pp. 2784-2792) Los Alamitos, CA: IEEE Computer Society. (Published)

FASTER: Fusion analytics for public transport event response industrial applications track, by BLANDIN, Sebastien; WYNTER, Laura; POONAWALA, Hasan; LAGUNA, Sean; DURA, Basile. (2019.0). *AAMAS '19: Proceedings of the 18th International Conference on Autonomous Agents and MultiAgent System, Montreal, Canada, May 13-17,* (pp. 1404-1412) New York: ACM. https://doi.org/10.5555/3306127 (Published)

Robust commuter movement inference from connected mobile devices, by KUNDU, Achintya; YU, Pengqian; WYNTER, Laura; LIM, Shiau Hong. (2018.0). *Proceedings of the 2022 IEEE International Conference on Edge Computing and Communications (EDGE), Barcelona, Spain, July 10-16* , (pp. 640-647) Los Alamitos, CA: IEEE Computer Society. https://doi.org/10.1109/ICDMW.2018.00099 (Published)

Efficient real-time mobile traffic information acquisition, by LIM, Shiau Hong; CHIA, Yeow Khiang; WYNTER, Laura. (2017.0). *Proceedings of the 2016 IEEE Region 10 Conference (TENCON), Singapore, November 22-25,* (pp. 3786-3789) Piscataway, NJ: IEEE. https://doi.org/10.1109/TENCON.2016.7848770 (Published)

A weighted maximum matching algorithm for influence maximization and structural controllability, by SARTOR, Giorgio; CHIA, Yeow Khiang; WYNTER, Laura; RUTHS, Justin. (2017.0). *Proceedings of the 20th IFAC World Congress, Toulouse, France, 2017 July 9-14,* (pp. 14447-14453) Amsterdam: Elsevier. https://doi.org/10.1016/j.ifacol.2017.08.2288 (Published)

Denoising autoencoders for fast real-time traffic estimation on urban road networks, by GHOSH, Soham; ASIF, Muhammad Tayyab; WYNTER, Laura. (2017.0). *56th IEEE Annual Conference on Decision and Control, CDC 2017,* (pp. 6307-6312) Piscataway, NJ: IEEE. https://doi.org/10.1109/CDC.2017.8264610 (Published)

Optimal decentralized queuing system with diversion: Using incentives to influence behavior, by

DESFONTAINES, Lucie; WYNTER, Laura. (2016.0). *Proceedings of the 55th IEEE Conference on Decision and Control, CDC 2016, Las Vegas, USA, December 12-14,* (pp. 1912-1919) Piscataway, NJ: IEEE. https://doi.org/10.1109/CDC.2016.7798544 (Published)

Singapore in motion: Insights on public transport service level through farecard and mobile data analytics, by POONAWALA, Hasan; KOLAR, Vinay; BLANDIN, Sebastien; WYNTER, Laura; SAHU, Sambit. (2016.0). *KDD '16: Proceedings of the 22nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, San Francisco, California, USA, August 13-17,* (pp. 589-598) New York: ACM. https://doi.org/10.1145/2939672.2939723 (Published)

Analysis and real-time prediction of local incident impact on transportation networks, by HE, Yuye; BLANDIN, Sebastien; WYNTER, Laura; TRAGER, Barry. (2015.0). *Proceedings of the 14th IEEE International Conference on Data Mining Workshops, ICDMW 2014, Shenzhen, China, December 14,* (pp. 158-166) Pistacataway: IEEE. https://doi.org/10.1109/ICDMW.2014.183 (Published)

A fast decomposition approach for traffic control, by TANG, Xiaocheng; BLANDIN, Sébastien; WYNTER, Laura. (2014.0). *Proceedings of the 19th World Congress The International Federation of Automatic Control, Cape Town, South Africa, 2014 August 24-29,* (pp. 5109-5114) Cape Town: IFAC Secretariat. https://doi.org/10.3182/20140824-6-za-1003.02676 (Published)

Improving traffic prediction with tweet semantics, by HE, Jingrui; SHEN, Wei; DIVAKARUNI, Phani; WYNTER, Laura; LAWRENCE, Rick. (2013.0). *IJCAI '13: Proceedings of the Twenty-Third international joint conference on Artificial Intelligence, Beijing, China, August 3-9,* (pp. 1387-1393) New York: ACM. https://doi.org/10.5555/2540128.2540328 (Published)

Real-time road traffic fusion and prediction with GPS and fixed-sensor data, by SHEN, Wei; WYNTER, Laura. (2012.0). *Proceedings of the 15th International Conference on Information Fusion, FUSION 2012, Singapore, July 9-12,* (pp. 1468-1475) Piscataway, NJ: IEEE. https://ieeexplore.ieee.org/document/6289981 (Published)

Traffic velocity prediction using GPS data: IEEE ICDM Contest task 3 report, by SHEN, Wei; KAMARIANAKIS, Yiannis; WYNTER, Laura; HE, Jingrui; HE, Qing; LAWRENCE, Rick; SWIRSZCZ, Grzegorz. (2010.0). *ICDMW '10: Proceedings of the 2010 IEEE International Conference on Data Mining Workshops, Sydney, Australia, December 13*
, (pp. 1369-1371) Los Alamitos, CA: IEEE Computer Society. https://doi.org/10.1109/ICDMW.2010.52 (Published)

Ensemble-based method for Task 2: Predicting traffic Jam, by HE, Jingrui; HE, Qing; SWIRSZCZ, Grzegorz; KAMARIANAKIS, Yiannis; LAWRENCE, Rick; SHEN, Wei; WYNTER, Laura. (2010.0). *Proceedings of the 2010 IEEE International Conference on Data Mining Workshops, Sydney, Australia, December 13*

, (pp. 1363-1365) Los Alamitos, CA: IEEE Computer Society. https://doi.org/10.1109/ICDMW.2010.54 (Published)

Usage-based versus flat pricing for e-business services with differentiated QoS, by LIU, Zhen; WYNTER, Laura; XIA, Cathy. (2003.0). *Proceedings of the 2003 IEEE International Conference on E-Commerce Technology (CEC'03), Newport Beach, California, June 24-27*
, (pp. 355-362) Los Alamitos, CA: IEEE Computer Society. https://doi.org/10.1109/COEC.2003.1210271 (Published)

Autonomic management of stream processing applications via adaptive bandwidth control, by PENDARAKIS, Dimitrios; SILBER, Jeremy; WYNTER, Laura. (2006.0). *Proceedings of the 26th IEEE International Conference on Distributed Computing Systems (ICDCS'06), Lisboa, Portugal, July 4-7*

, (pp. 1-7) Los Alamitos, CA: IEEE Computer Society. https://doi.org/10.1109/ICDCS.2006.20 (Published)

Parameter inference of queueing models for IT systems using end-to-end measurements, by WYNTER, Laura; XIA, Cathy H.; ZHANG, Fan. (2004.0). *SIGMETRICS 2004/Performance 2004: Joint International Conference on Measurement and Modeling of Computer Systems, New York, June 12-16,* (pp. 408-409) New York: ACM. https://doi.org/10.1145/1012888.1005741 (Published)

Performance planning, quality-of-service, and pricing under competition, by TOUATI, Corinne; DUBE, Parijat; WYNTER, Laura. (2004.0). *Proceedings of the Third International IFIP-TC6 Networking Conference, Athens, Greece, 2004 May 9-14,* (pp. 442-453) Cham: Springer Verlag. https://doi.org/10.1007/978-3-540-24693-0_37 (Published)

Dynamic offloading in a multi-provider environment: A behavioral framework for use in influencing peering, by LIU, Zhen; MISRA, Vishal; WYNTER, Laura. (2004.0). *Proceedings of the 2004 IEEE International Symposium on Cluster Computing and the Grid, CCGrid, Chicago, IL, USA, April 19-22*

, (pp. 449-458) Los Alamitos, CA: IEEE Computer Society. https://doi.org/10.1109/CCGrid.2004.1336600 (Published)

Outsourcing and price-QoS equilibrium for e-commerce and internet firms: IT on-demand, by DUBE, Parijat; LIU, Zhen; WYNTER, Laura; XIA, Cathy. (2003.0). *Proceedings of the 42nd IEEE Conference on Decision and Control, Maui, HI, USA, 2003 December 9-12,* (pp. 5801-5806) Piscataway, NJ: IEEE. https://doi.org/10.1109/CDC.2003.1271930 (Published)

Pricing and QoS of information services in a competitive market, by LIU, Zhen; WYNTER, Laura; XIA, Cathy. (2003.0). *EC '03: Proceedings of the 4th ACM conference on Electronic commerce, Diego, USA, 2003 June 9-12,* (pp. 188-189) New York: ACM. https://doi.org/10.1145/779928.77995 (Published)

Capacitated network revenue management through shadow pricing, by BOUHTOU, Mustapha; DIALLO, Madiagne; WYNTER, Laura. (2003.0). *Proceedings of the 5th COST 264 International Workshop on Networked Group Communications, NGC 2003
and 3rd International Workshop on Internet Charging and QoS Technologies, ICQT 2003, Munich, Germany, September 16-19,* (pp. 342-354) Cham: Springer Verlag. (Published)

Research Grants

Singapore Management University

Towards Robust Evaluation of AI-Generated Code for Enterprise Software Systems, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): WYNTER Laura , Co-PI (Project Level): JIANG Lingxiao, 2025, S$150,000

TEACHING

Teaching Areas

Generative AI, Large Language Models

Courses Taught

Singapore Management University

Undergraduate Programmes :

    Generative AI with LLMs: From Development to Applications

Postgraduate Professional Programmes :

    Generative AI with Large Language Models

Executive Development :

    Generative AI for Industry, Pro-bono executive seminar, to aid in SMU's biz relationship with the client, Katoen Natie, 27 Oct 2025-27 Oct 2025

UNIVERSITY SERVICE

Singapore Management University

Attendee Meeting, Represented SMU SCIS at Google Gemini Workshop, Sep 2025

Represents the AI track in workshops and meetings with BIS-IH, Bank of International Settlements Innovation Hub Workshops: AI track, Aug 2025 - Present

Nnew course creator, NA, Jan 2025 - Dec 2025