

SUPUN PERERA

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An accomplished transportation engineer/researcher with over 12 years of industry experience in consulting, and local and state government sectors. Experienced in transport planning, traffic engineering/modelling/design, project/stakeholder management and business development through involvement in a multitude of projects from concept to completion. Strong analytical skills and ability to effectively communicate complex ideas in inter-disciplinary forums, gained through master's and doctoral-level studies in transportation networks. Eager to apply these relevant skills to significant projects for the betterment of the community.

EDUCATION

The University of Sydney, Australia

May 2019

PhD in Network Science applications to Transportation and Logistics Systems

Thesis title: Topological Approach to Modelling the Structure, Dynamics, and Robustness of Supply Chain Networks

University of California at Berkeley, USA

May 2012

M.S. Civil and Environmental Engineering

Program: Transportation Engineering

The University of Auckland, New Zealand

December 2010

B.E. Civil and Environmental Engineering (with First Class Honours)

Major: Transportation Engineering

PROFESSIONAL EXPERIENCE

Associate Director, Transport Advisory

Urbis

August 2022 – December 2023

My responsibilities in this role include:

- Providing strategic advice to clients in relation to transportation engineering and planning-related matters.
- Managing a team of five consultants and senior consultants for the regular delivery of transportation projects of various sizes, for private and public sector clients.
- Developing innovative ways to analyse transportation systems such as through the use of mobile-based human movement data.

Senior Transportation Engineer

Stantec

October 2021 – September 2022

My responsibilities in this role included:

- Project managed and prepared traffic engineering/modelling/design assessments to accompany development plans and planning permit applications for numerous significant projects including the Highpoint Shopping Centre, Victoria Gardens, New Epping Renewal Site and Merrifield Town Centre.

- Liaised with the Department of Transport, local Councils and multi-disciplinary teams comprising lawyers, planners, economists and architects to provide advice at conclaves and for VCAT hearings on transportation issues for various projects across VIC, including the Suburban Rail Loop (SRL) project.

Senior Transport Planner (Full-time)

Transport for NSW (TfNSW)

November 2020 – July 2021

My responsibilities in this role included:

- Working collaboratively across the transport cluster (including Sydney Trains) to provide timely comments and advice to the Department of Planning, Industry and Environment (DPIE), local Councils and developers on planning proposals/transport strategies and proposing impact mitigation measures.
- Reviewing transport-related referral and concurrence requirements by participating in meetings with subject matter experts.
- Ensuring TfNSW representation through attendance at external forums such as development committees, technical reference/working groups, and planning focus meetings.

Senior Consultant (Full-time)

Urbis Pty Ltd

February 2020 – November 2020 (9 months)

In this role, I was responsible for project management and provision of traffic engineering/transport planning input into various development projects. I was involved in:

- Providing strategic advice to developers and support documentation to relevant authorities concerning transportation-related development projects.
- Undertaking data analysis, feasibility studies and business cases for the implementation of trackless trams in NSW, VIC and WA.
- Preparing transport masterplans and placemaking strategies on behalf of local Councils to facilitate the implementation of the recently developed movement and place framework.
- Data analysis and research for (1) restructuring the NSW bus network under COVID-19 constraints, (2) preparation of zero-emission bus trial submissions to TfNSW, and (3) estimating the anticipated ferry patronage levels for the proposed Circular Quay NSW redevelopment project.

Senior Research Analyst (Full-time)

**Institute of Transport and Logistics Studies
(ITLS) at the University of Sydney**

August 2014 – January 2020 (5 years 4 months)

This role involved carrying out research projects related to transportation and logistics systems. I:

- Applied network science techniques to transportation and logistics systems to study their robustness under different stress scenarios.
- Actively collaborated with researchers and industry practitioners (both private and public sector) for the acquisition of data and discussion of research methodologies.
- Attended domestic and international conferences to disseminate the research findings and to obtain feedback from other researchers and practitioners.
- Prepared research proposals, grant applications, and research manuscripts for publication in high-impact journals.
- Successfully organised two major international conferences (LOGMS 2016 and INSTR 2019).
- Developed strategies and initiatives to steer the direction of research to be consistent with the Institute of Transport and Logistics Studies' strategic objectives.

Lead Tutor (Casual)**RMIT University***January 2017 –December 2017 (1 year)*

In this position, I managed a team of tutors for the delivery of Supply Chain Modelling & Design online classes (for two semesters). This role required me to:

- Actively collaborate with the Senior Lecturer and the other tutors to develop techniques for effective online delivery of course material to students.
- Promptly attend to student queries and mark/grade their assignments and exams.

Senior Traffic Engineer (Casual)**APEX Engineers***January 2014 – January 2020 (6 years)*

APEX Engineers was founded by me and over the years has provided traffic engineering/transport planning consultancy and project management services for various developments across Australia. In this position, I:

- Coordinated and managed a team of three other engineers to provide timely and cost-effective technical consultancy services for clients, for various projects ranging in scale and scope.
- Communicated effectively with project stakeholders and local and state-level authorities to provide them with the necessary information to obtain timely approvals.

Traffic Engineer/Project Manager (Full-time)**Cardno NSW Pty Ltd***August 2012 – August 2014 (2 years 1 month)*

In this role, I provided traffic engineering, transport planning and parking-related input for various developments. I was involved in:

- Preparation and project management of traffic impact assessments, crash studies, construction traffic management plans and parking design/dispensation assessments.
- Development of micro/mesoscopic traffic models (using SIDRA and Paramics software).
- Planning public transport interchanges (Sydenham and Wentworthville).

In this role, I was also seconded to TfNSW as a data analyst for 3 months, to offer data analysis and manipulation services to further develop the TfNSW's Country Passenger Rail Services Strategy (CPRSS). This CPRSS informed the development of the country rail network, particularly regarding customer-focussed initiatives and service improvements, and guided future investments in service and fleet.

Graduate Student Researcher (Part-time)**University of California at Berkeley, USA***August 2011 – May 2012 (10 months)*

This role involved the development of transportation cost models and researching methods for platooning buses to improve road sharing between cars and buses on corridors using traffic flow theory.

Research Assistant (Casual)**Transportation Research Centre at the
University of Auckland***January 2010 – July 2011 (1 year 6 months)*

I was a research assistant on two projects: (1) Studying the weak segments of public-transportation networks in two major cities (Auckland and London) and identifying remedies to strengthen them; (2) Researching on techniques to improve train timetabling, crew scheduling and reviewing other operations-planning undertakings, on behalf of Veolia Auckland (train operators).

Assistant Engineer (Part-time)**Waitakere City Council, Auckland***December 2008 - December 2010 (2 years 1 month)*

In this role, I was involved with undertaking engineering designs (of wastewater drainage systems), carrying out asset management audits, and updating the information on the infrastructure in the Waitakere region (including roads, footpaths, pathways, storm, and wastewater pipes, manholes) into the City's GIS database.

Structural Engineering Intern (Full-time)**Downer, New Zealand***December 2009 - March 2010 (4 months)*

This role involved assisting the senior design engineers with structural designs, including the design and construction of flood walls and concrete formworks using various structural design software. I was also involved in the preparation of tenders.

VISITING SCHOLAR APPOINTMENTS

Visiting Research Fellow**University of Cambridge***June 2019 - July 2019 (2 months)*

As a visiting research fellow at the Institute for Manufacturing (IfM), my work focused on network modelling of complex supply chain systems with a particular focus on the relationship between nested patterns and the ripple effects in supply networks. This work was done in collaboration with Dr Alexandra Brintrup.

Visiting Scholar**Massachusetts Institute of Technology (MIT)***October 2018 - December 2018 (3 months)*

In this visit to MIT's TransitLab, I carried out a research project on using big data to develop passenger-based reliability metrics for public transport (case study using Sydney Opal Card data). This research was supervised by Prof. Nigel Wilson and Prof. Haris Koutsopoulos.

VOLUNTEER ACTIVITIES

Volunteer Engineer**Engineers Without Borders, New Zealand***April 2011 - June 2011 (3 months)*

I was involved in the 'Republic of Kiribati rainwater harvesting for community buildings' project where I designed and planned the construction and installation of rainwater harvesting systems on 10 public buildings in South Tarawa.

Volunteer Engineer/Teacher**Anmchara International School in Segla, Ghana***January 2011 - March 2011 (3 months)*

I designed and supervised the construction of a rainwater collection and storage tank, which serves a school (consisting of 300 students) and the local communities. I also had the opportunity to teach geometric design (which was a part of the Maths curriculum for Grade 10) to the school children.

Volunteer Tutor**I Have a Dream Charitable Trust, New Zealand***August 2005 - November 2006 (1 year 4 months)*

My role as a volunteer teacher involved assisting secondary-level children with their schoolwork (mainly Maths, Science and English).

HONORS, AWARDS, GRANTS AND SCHOLARSHIPS

Honorary Associate at the Institute of Transport & Logistics Studies, University of Sydney Business School

July 2020-December 2021

Title in recognition of ongoing research contributions to the Institute of Transport and Logistics Studies (ITLS).

Volvo Research and Educational Foundations (VREF) Award

October 2018

Funding provided by the Volvo Research and Educational Foundation, to carry out research across institutions (Bus Rapid Transit Centres of Excellence).

Business School Research Scholarship Award

January 2018

Scholarship provided by the Business School at the University of Sydney, based on academic merit, to continue PhD studies.

University of Sydney, Business School Publication Award

June 2018

Funding provided by the University of Sydney, based on the number of papers published in top-tier journals.

Research Travel Support Scheme Award

June 2017

This is a competitive fund provided by the University of Sydney, for conference travel (based on research excellence). The funds were used to attend the SIAM conference on Network Science held in Pittsburgh, USA.

Pre-Doctoral Fellowship

January 2015

My PhD research was funded by a pre-doctoral fellowship offered through a project under an Australian Research Council discovery grant.

Graduate Division Block Grant Award

2011

A Full scholarship offered competitively to the best-performing transportation engineering students across the world, to pursue master's level studies at the University of California at Berkeley.

The University of Auckland Doctoral Scholarship

2011

Full scholarship offered competitively, to carry out doctoral studies at the University of Auckland (this scholarship was terminated before the end of its term due to my decision to carry out a master's degree in the USA).

Jubilee Award for Academic Merit

2009

Monetary scholarship awarded by the University of Auckland, based on academic merit.

Bonded Merit Scholarship

2008

Monetary scholarship awarded by Study Link in New Zealand, based on academic merit.

Scholarship in Accounting

2007

Monetary scholarship awarded by the New Zealand Qualifications Authority for the top 3% of the total number of students sitting the final high school year exams.

CERTIFICATIONS AND MEMBERSHIPS

- Certificate in Small Business Management (Māori Tertiary Education Institution, New Zealand)
- Registered under the National Engineering Register (NER)
- Certified by TfNSW to Prepare Work Zone Traffic Management Plans
- Registered Professional Engineer Queensland (RPEQ)
- National WHS General Construction Induction (White Card)
- Member of the Institute of Engineers Australia (MIEAust)
- Member of the Australian Institute of Traffic Planning and Management (M.AITPM)
- Full member of Beta Gamma Sigma

Refereed Journal Articles

- Chauhan, V. K., Perera, S., & Brintrup, A. (2021). The relationship between nested patterns and the ripple effect in complex supply networks. *International Journal of Production Research*, 59(1), 325-341.
- Perera, S., Ho, C., & Hensher, D. (2020). Resurgence of demand responsive transit services–Insights from BRIDJ trials in Inner West of Sydney, Australia. *Research in Transportation Economics*, 83, 100904.
- Cheung, K. F., Bell, M. G., Pan, J. J., & Perera, S. (2020). An eigenvector centrality analysis of world container shipping network connectivity. *Transportation Research Part E: Logistics and Transportation Review*, 140, 101991.
- Pan, J. J., Bell, M. G., Cheung, K. F., Perera, S., & Yu, H. (2019). Connectivity analysis of the global shipping network by eigenvalue decomposition. *Maritime Policy & Management*, 46(8), 957-966.
- Perera, S., Kasthurirathna, D., Bell, M., & Bliemer, M. (2020). Topological rationality of supply chain networks. *International Journal of Production Research*, 58(10), 3126-3149.
- Bell, M. G., Pan, J. J., Teye, C., Cheung, K. F., & Perera, S. (2020). An entropy maximizing approach to the ferry network design problem. *Transportation Research Part B: Methodological*, 132, 15-28.
- Perera, S., Bell, M., Piraveenan, M., Kasthurirathna, D., Parhi, M. (2018). Topological Structure of Manufacturing Industry Supply Chain Networks. *Complexity*, 2018.
- Perera, S., Bell, M. G., & Bliemer, M. C. (2017). Network science approach to modelling the topology and robustness of supply chain networks: a review and perspective. *Applied Network Science*, 2(1), 33.
- Bell, M. G., Kurauchi, F., Perera, S., & Wong, W. (2017). Investigating transport network vulnerability by capacity-weighted spectral analysis. *Transportation Research Part B: Methodological*, 99, 251-266.
- Bell, M., Perera, S., Piraveenan, M., Bliemer, M., Latty, T., & Reid, C. (2017). Network growth models: A behavioural basis for attachment proportional to fitness. *Scientific Reports*, 7, 42431.
- Ceder, A. A., & Perera, S. (2014). Detecting and improving public-transit connectivity with case studies of two world sport events. *Transport Policy*, 33, 96-109.

Refereed Conference Proceedings

- Brintrup, A., & Perera, S. (2019, September). Quantifying Outsourcing Risk Arising from Product Interdependencies in Supply Networks. In *2019 First International Conference on Graph Computing (GC)* (pp. 75-82). IEEE.
- Bell, M. G., Pan, J. J., Teye, C., Cheung, K. F., & Perera, S. (2019). An entropy maximizing approach to the ferry network design problem. *Transportation Research Procedia*, 38, 20-36.
- Perera, S., Bell, M. G., Kurauchi, F., & Kasthurirathna, D. (2019, July). Absorbing Markov Chain approach to modelling disruptions in supply chain networks. In *2019 Moratuwa Engineering Research Conference (MERCon)* (pp. 515-520). IEEE.
- Perera, S., Perera, H. N., & Perera, K. (2018). Topological structure of the road traffic network in the Western Regional Megapolis, Sri Lanka. In *Engineering Research Conference (MERCon), 2018 Moratuwa* (pp. 37-42). IEEE.
- Perera, S., Perera, H. N., & Kasthurirathna, D. (2017). Structural characteristics of complex supply chain networks. In *Engineering Research Conference (MERCon), 2017 Moratuwa* (pp. 135-140). IEEE.
- Perera, S., Perera, H. N., & Kasthurirathna, D. (2017). Value chain approach for modelling resilience of tiered supply chain networks. In *Engineering Research Conference (MERCon), 2017 Moratuwa* (pp. 159-164). IEEE.
- Perera, S. S., Bell, M. G., & Bliemer, M. C. (2016). Resilience characteristics of supply network topologies generated by fitness-based growth models. *95th Annual Meeting of the Transportation Research Board TRB*, Washington, D.C., United States, 14th January 2016.
- Perera, S. S., Bell, M., & Bliemer, M. (2015). Modelling Supply Chains as Complex Networks for Investigating Resilience: An Improved Methodological Framework. In *Proceedings of the 37th Australasian Transport Research Forum (ATRF)*, Sydney, Australia (Vol. 30).
- Ceder, A. A., & Perera, S. (2012). Detecting and Improving Public-Transit Connectivity with Case Studies of Two World Sport Events. *91st Annual Meeting of the Transportation Research Board TRB*, Washington, D.C., United States, 22-26 January 2012.

Conference Abstracts

- Pan, J., Bell, M., Cheung, K.F., Perera, S. (2018). [Analysis of the world shipping network by eigenvalue decomposition](#). *7th International Symposium on Transportation Network Reliability (INSTR 2018)*, Sydney, Australia, 17-19 January, 2018.
- Ando, H., Kurauchi, F., Myoko, S., Bell, M., Perera, S. (2018). Use of the spectral partitioning method to evaluate the connectivity of road networks. *7th International Symposium on Transportation Network Reliability (INSTR 2018)*, Sydney, Australia, 17-19 January, 2018.
- Perera, S., Kasthurirathna, D., Bell, M. (2017). [Interplay between System Rationality and Topological Structure of Supply Chain Networks](#). *SIAM Workshop on Network Science (NS 17)* Pittsburgh, PA, USA, 13-14 July, 2017.
- Perera, S., Sarkar, S., Bell, M. (2017). [Identifying Trade Communities in the Global CO₂ Supply Chain Network using Singular Value Decomposition](#). *SIAM Workshop on Network Science (NS 17)* Pittsburgh, PA, USA, 13-14 July, 2017.
- Perera, S., Bell, M.G.H., Piraveenan, M., Bliemer, M. (2016). Empirical Investigation of Supply Chain Structures using Network Theory. *6th International Conference on Logistics and Maritime Systems (LOGMS)*, Sydney, Australia, 20-23 June 2016.

REFEREES

INDUSTRY WORK

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RESEARCH WORK

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