Jiri Paukrt, Ing.

Principal Transportation Engineer · SYSTRA (Dublin, Ireland) · based in the Czech Republic

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PROFILE

Transport modeller with 27 years of experience across Ireland, the UK, Australia and the Czech Republic. Managed the development and calibration of Ireland's National Demand Forecasting Model for the National Transport Authority, backed by more than ten years of microsimulation modelling, variable demand modelling, GIS analysis and programming.

EXPERIENCE

Principal Transportation Engineer — SYSTRA

Jan 2008 - present

Dublin, Ireland

- Development, calibration and validation of large strategic demand models.
- Managed the development and calibration of the National Demand Forecasting Model for the National Transport Authority; involved in developing and calibrating its five regional models, which together cover the Republic of Ireland.
- Developed the National Trip End Model, the Long Distance Demand Model of Ireland and a demand model for major ports and airports in Ireland and Northern Ireland.
- Microsimulation models of 11 UK towns, including Plymouth, Blackpool, Nuneaton and Douglas (Isle of Man); variable demand models of Plymouth and Chippenham.
- Visitor demand modelling for the Glasgow 2014 and Birmingham 2022 Commonwealth Games.
- Standalone programs in VB, VBA and Python that add functionality, increase efficiency and improve reporting.
- Most recently: new post-COVID trip rates for the NTA's 2022 base-year model update, presented at the European Transport Conference 2025 in Antwerp.
- Co-author of papers and talks on the Long Distance Model (ETC 2019), the M74 evaluation (STAR 2017) and traffic conflicts (ICTTE 2014).

Senior Transport Modeller — Hyder Consulting

Oct 2006 - Dec 2007

Melbourne, Australia

- Responsible for the microsimulation model of Dandenong, Melbourne, and for testing revitalisation options — land use, road network and public transport — for one of the largest revitalisation projects in Australia at the time.
- Involved in developing the Lane Cove Tunnel microsimulation model in Sydney, covering the surface network along the full tunnel corridor and used to assess construction traffic management plans; the largest microsimulation model in Australia by geographical coverage at the time.

Transport Planner — Jacobs Babtie

Jul 2004 - Sep 2006

Leeds, UK

- Development of strategic models in SATURN.
- Cost–benefit assessments using COBA.
- Spreadsheet-based traffic models and transport assessments.
- Visual Basic applications to speed up model development and data processing.

Transport Planner — CityPlan

Jul 1999 - Jun 2004

Prague, Czech Republic

- Economic assessments using HDM-4.
- SWOT and multi-criteria assessments of transport networks.
- Research projects for the Czech Ministry of Transport.

SELECTED PROJECTS

National Demand Forecasting Model — Dublin, Ireland
Role: Managed the development and calibration of the NDFM; developed the National Trip End Model

NTA Long Distance Model — Dublin, Ireland, 2019
Role: Developed the Long Distance Demand Model; co-presenter at ETC 2019

M74 Completion Scheme — 5 Years After — Glasgow, Scotland, 2016–2017
Role: Co-author of the five-year post-opening evaluation

Road Safety via Traffic Conflicts — Brno, Czech Republic, 2014
Role: Co-author

Commonwealth Games Visitor Demand — Glasgow & Birmingham, UK, 2014 · 2022
Role: Involved in modelling visitor demand

Lane Cove Tunnel Microsimulation — Sydney, Australia, 2006–2007
Role: Involved in developing the microsimulation model

Dandenong Revitalisation Microsimulation — Dandenong, Melbourne, Australia, 2006–2007
Role: Responsible for the model and option testing

UK Town Microsimulation Models — England & Isle of Man
Role: Developed the microsimulation models

PUBLICATIONS & CONFERENCE PAPERS

Post COVID-19 Trip Rate Estimation in Ireland. William Brazil, Warren Whitney, Jiri Paukrt. NTA, September 2025 · presented at ETC 2025, Antwerp.

National Transport Authority Long Distance Model. Sean Kearns, Jiri Paukrt. European Transport Conference (ETC 2019), Dublin.

Scottish Trunk Road Infrastructure Project Evaluation (STRIPE): M74 Completion Scheme — 5 Years After Opening. Robert Allan, Iain Clement, Jiri Paukrt. STAR Conference 2017, Glasgow.

Road safety evaluation using traffic conflicts: Pilot comparison of micro-simulation and observation. Jiří Ambros, Richard Turek, Jiri Paukrt. ICTTE 2014, Belgrade.

TOOLS

Microsimulation: 3D visualisation, Paramics Discovery, S-Paramics

Strategic Demand: SATURN, Variable Demand Modeling

Appraisal: COBA, HDM-4

GIS & Code: QGIS, ArcGIS, Python, Ruby, Google Maps & OpenStreetMap APIs, SQL, VB/VBA

EDUCATION

Master's Degree (Ing.) in Transport Planning and Traffic Engineering
Czech Technical University in Prague (ČVUT), Prague, Czech Republic, 1994 – 1999

LANGUAGES

Czech (native) · English (professional working proficiency)