

# Abhilash Chandra Singh

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<b>EDUCATION</b>	<b>Doctor of Philosophy (PhD) in Transportation</b> <span>2019 - 2023</span> Department of Civil and Environmental Engineering Imperial College London, UK PhD Viva (defense) and result: 11/09/2023 - Successful (no corrections) PhD award date (tentative): 01/11/2023 <i>Committee: Aruna Sivakumar (advisor), Dan Graham (examiner), Jonas De Vos (examiner)</i> <i>Dissertation: Endogeneity and consideration set issues in residential location choice models</i>
	<b>Master of Science in Engineering (MSE) in Transportation</b> <span>2016 - 2018</span> Department of Civil and Environmental Engineering University of Texas at Austin, USA <i>Committee: Chandra Bhat (advisor), Stephen Boyles (examiner)</i> <i>Thesis: Quantifying the relative contribution of factors to household vehicle miles of travel</i>
	<b>Bachelor of Technology (BTech) in Civil Engineering</b> <span>2012 - 2016</span> Department of Civil Engineering Indian Institute of Technology Bombay, India <i>Committee: Tom Mathew (advisor), Raaj Ramsankaran (faculty mentor)</i> <i>Thesis: Modelling Heterogeneous Traffic Behaviour under mixed traffic conditions</i>
<b>EMPLOYMENT HISTORY</b>	<b>Lecturer (part-time), Department of Civil Engineering - University of Limerick</b> <span>2023 - present</span> Limerick, Ireland
	<b>Researcher (full-time), School of Allied Health - University of Limerick</b> <span>2023 - present</span> Limerick, Ireland
	<b>Research Assistant, Imperial College London &amp; Pathways to Equitable Healthy Cities (WELLCOME)</b> <span>2019 - 2023</span> London, UK
	<b>Senior Data Scientist (part-time) - ASDA Business Services</b> <span>2021 - 2022</span> Leeds, UK
	<b>Visiting researcher, Alan Turing Institute &amp; Leeds Institute of Data Analytics</b> <span>Summer 2021</span> Leeds, UK
	<b>Research Assistant, CTR - University of Texas at Austin</b> <span>2016 - 2019</span> Austin, Texas, USA
	<b>Intern, Hindustan Construction Company</b> <span>Fall 2015</span> Mumbai, India
	<b>Summer research fellow, University of Alberta &amp; Landmark Group of Builders</b> <span>Summer 2015</span> Edmonton, Alberta, Canada
	<b>Summer intern, Indian Institute of Management Lucknow</b> <span>Summer 2014</span> Lucknow, India
<b>RESEARCH INTERESTS</b>	<b>Transportation</b> (Urban Planning, Sustainable Transportation, Urban Systems, Social Psychology, Technology Adoption Research) <b>Decision Sciences and Operations Research</b> (Endogeneity and Causality, Applied Econometrics, Applied Statistics, Choice-Based Optimization) <b>Behavioural Economics</b> (Consumer demand modelling, Energy Economics, Environmental Economics)

## AWARDS & FELLOWSHIPS

**Marie Skłodowska Curie Postdoctoral Fellowship (submitted)** Netherlands, 2023  
– Submitted grant proposal *B-GAME: Behavioural GAmE-theoretical MEthodology for solving the paradox of risk and safety on roads*, with Dr Amir Afghari, Safety & Security Science section at TU Delft

**Imperial College Research Fellowship (submitted)** UK, 2023  
– Submitted grant proposal *Future Cities: Sustainable Urban Development through Integrated Land Use, Transport, Energy and Environment (ILUTEE) modelling*, with Dr. Audrey de Nazelle, Center for Environmental Policy. Imperial College London

**Imperial College Global Fellowship** UK, 2022  
– Awarded grant funding of £1,400 to conduct research in Germany

**Turing Scheme Research Award** UK, 2022  
– Awarded grant funding of £1,500 to conduct research in Germany

**Department Dixon Scholarship** UK, 2019 - 2023  
– Awarded funding of £8,654 per annum (total = £25,962) for PhD in the UK

**Wellcome Trust Scholarship** UK, 2019 - 2023  
– Awarded funding of £17,009 per annum (total = £59,531) for PhD in the UK

**Professional Development Award** USA, 2018  
– Awarded \$500 to support research development in Texas, USA

**Texas District Student Fellowship** USA, 2017  
– Awarded \$1,000 to support research development in Texas, USA

**Graduate fellowship** USA, 2016-2018  
– Awarded funding of \$52,812 per annum (total = \$105,524) for graduate education in USA

**University of Alberta Research fellowship** Canada, 2015  
– Awarded research grant of \$5,000 to conduct research in Canada

**IITBAA-NY Chapter scholarship** USA, 2014  
– Awarded bursary of \$5,000 for studies as an exchange student in New York

## WORKING PAPERS (intended for journals)

**10. Singh, A.C.** Analysing Factors Influencing Household Vehicle Kilometres Travelled (VKT): A Comprehensive Study.

**9. Singh, A.C.**, Christopher Tsa-Kwet-Shin, A. Faghih-Imani and Audrey de Nazelle. Bicycle route choice modelling using multi-city data.

**8. Singh, A.C.** and N. Daina. Choice-based optimization for sustainable overnight charging of electric vehicles.

**7. Singh, A.C.**, A. Sivakumar. Accessibility in the Era of Big Data and Emerging Technologies.

## JOURNAL PAPERS (including submitted)

**6. Singh, A.C.**, A. Sivakumar and H. Watanabe. An instrumental variable model for addressing endogeneity in residential location choice (in prep for Journal of Transport and Land Use).

**5. Watanabe, H.** and **A.C. Singh**. A probit instrumental variable model for addressing endogeneity in multinomial choice and its choice set formation (in prep for Transportation Research Part B: Methodological).

**4. Singh, A.C.**, A. Sivakumar and R. Moeckel. Semi-compensatory probabilistic model for

residential location choices (in prep for Journal of Choice Modelling).

3. Sivakumar, A., A. Gough, **A.C. Singh**, and F. Guo. Incorporating the impacts of air pollutants and exposure to crime into accessibility-based planning: A London Case Study (in prep for Journal of Transport Geography).

2. **Singh, A.C.**, A. Faghih-Imani, A. Sivakumar, Y. Xi and E. J. Miller. A joint analysis of accessibility and household trip frequencies by travel mode (R&R with Transportation Research Part A: Policy and Practice).

1. **Singh, A.C.**, S. Astroza, V.M. Garikapati, R.M. Pendyala, C.R. Bhat, and P.L. Mokhtarian (2018), Quantifying the Relative Contribution of Factors to Household Vehicle Miles of Travel. Transportation Research Part D, Vol. 63, pp. 23-36.

## REPORTS

1. Boyles, S. D., C. Bhat, J. Duthie, N. Jiang, F. Dias, E. Jafari, V. Pandey, **A.C. Singh**, and C. Yahia. (2017) Methods for Improving Consistency between Statewide and Regional Planning Models. Texas Department of Transportation FHWA/TX-17/0-6900-1

## CONFERENCE PRESENTATIONS

14. **Singh, A.C.** and N. Daina\*. Choice-based optimization of electricity consumption during overnight charging of electric vehicles (\*invited for INFORMS presentation, October 2023, Arizona, USA).

13. Sivakumar, A., **A.C. Singh**, F. Guo and A. Gough. Incorporating the impacts of air pollutants and exposure to crime into accessibility-based planning: A London Case Study (accepted for presentation at Irish Transport Research Network Conference 2023, Sligo, Ireland).

12. Watanabe H. and **A.C. Singh**. A probit instrumental variable model for addressing endogeneity in multinomial choice and its choice set formation (16<sup>th</sup> World Conference on Transportation Research (WCTR) 2023, Montreal, Canada).

11. **Singh, A.C.**, A. Faghih-Imani, A. Sivakumar, Y. Xi and E. J. Miller. A joint analysis of accessibility and household trip frequencies by travel mode (16<sup>th</sup> World Conference on Transportation Research (WCTR) 2023, Montreal, Canada).

10. **Singh, A.C.**, A. Sivakumar. Semi-compensatory probabilistic model for residential location choices. 7<sup>th</sup> International Choice Modeling (ICMC), Reykjavik, Iceland, May 2022.

9. **Singh, A.C.**, H. Bouscasse, A. Sivakumar. Psychosocial Factors associated with Intended Use of Automated Vehicles: A Latent-Class and Latent-Variable Analysis. 9<sup>th</sup> Symposium of the European Association for Research in Transportation (hEART), Lyon, France, February 2021.

8. **Singh, A.C.**, K.C. Abel, J.W. Hutchinson, K.M. Faust, and C.R. Bhat. Food Access for Low Income Individuals. Session on Highlights from the 2017 NHTS Data Workshop. 98<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, DC, January 2019.

7. **Singh, A.C.**, K.C. Abel, J.W. Hutchinson, K.M. Faust, and C.R. Bhat. Predictive Food Desert Simulation Modelling to increase Food Access in Underserved Communities. National Household Travel Survey (NHTS) Data for Transportation Applications Workshop in Washington, DC in August 2018.

6. **Singh, A.C.**, P. Lavieri, T. Kim, C.R. Bhat, and R.M. Pendyala. Evaluating the Effects of Consumer's Perceptions of Safety and Productive Use of Time on the Intention to Adopt Autonomous Vehicle Technology. 15<sup>th</sup> International Conference on Travel Behaviour Research, Santa Barbara, California, July 2018.

5. Bouscasse H., **A.C. Singh**, S. Astroza, C.R. Bhat. Modeling Simultaneous Choices in Transportation. Rencontres Francophones Transport-Mobilité (RFTM), Lyon, June 2018.

	4. Copperman R., J. Lemp, T. Rossi, <b>A.C. Singh</b> , C.R. Bhat, R.M. Pendyala, S. Khoeini, S. Astroza. Adapting an Existing Activity Based Modeling Structure for the New York Region. 2018 TRB Innovations in Travel Modeling Conference, June 2018.	
	3. <b>Singh, A.C.</b> , S. Astroza, V.M. Garikapati, R.M. Pendyala, and C.R. Bhat. Quantifying the Contribution of Various Factors to Household Vehicle Miles of Travel. 97 <sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, DC, January 2018.	
	2. <b>Singh, A.C.</b> , L. Yang, and M. Al-Hussein. Predicting the Energy Output for Solar PV Systems: A Statistical Analysis. University of Alberta Research Experience (UARE) Poster Symposium, Edmonton, Alberta, July 2015	
	1. Yang L., E.K. Salim, <b>A.C. Singh</b> , H. Awad, H. Yu, M. Gül, and M. Al-Hussein. Integrating solar PV systems into residential buildings in cold-climate regions. University of Alberta Research Experience (UARE) Poster Symposium, Edmonton, Alberta, July 2015.	
<b>INVITED TALKS</b>	4. “Semi-compensatory probabilistic model for residential location choices” TU Berlin Kai Nagel’s Lab, July 2022	
	3. “Theoretical and Applied Choice Modelling” ASDA, March 2022	
	2. “Exploring and quantifying the effect of weather on sales.” The Alan Turing Institute, July 2021	
	1. “Integrating solar PV systems into residential buildings in cold-climate regions.” UARE, July 2015	
<b>TEACHING EXPERIENCE</b>	<b>Lecturer/Tutor: University of Limerick, Ireland</b> Design Studio (CE4023) Invited teacher for Fall 2023 semester, with a class of 42 students.	2023
	<b>Teaching Assistant: Imperial College London, UK</b> Transport Demand and Economics (CIVE70016) Advanced Transport Modelling (CIVE97126)	2022 2020, ’21, ’22
<b>SERVICE</b>	<b>Steering Committee Member: Imperial Network of Excellence</b> <b>Seminar series, Urban Systems Lab, Imperial College London</b> <b>Mentor</b> — The AMOS Bursary and TechLabs London <b>IIT Bombay Department Academic Mentorship Program (DAMP)</b>	2021 - 2023 2021 - 2023 2021 - 2022 2015 - 2016
	<b>Reviewing Activities:</b> Transportation Research Board Annual Meeting Data Science for Transportation Journal of Transport and Land Use Transportation Transportmetrica A: Transport Science World Symposium on Transport and Land Use Research Transportation Research Record	2017, 2019, 2021, 2023 2023 - present 2022 - present 2021 - present 2021 - present 2021 2019 - 2021
<b>RELEVANT COURSES</b>	<b>Imperial College London</b> Teaching training: Introduction to Assessment and Feedback for Learning Teaching training: Introduction to Learning and Teaching Teaching training: Applying for Associate Fellowship (AFHEA) Ensuring Integrity: Plagiarism (Online Course) Research Computing: Writing Theses in LaTeX Impact in Academia: Alternative Ways to Measure Your Research Impact Econometrics Methods for Causal Inference (Kings College London, <i>audit</i> ) Econometrics for Research (London School of Economics, <i>audit</i> ) Writing a Research Paper	2019 - 2023

Data Processing with Python Pandas  
Research Computing: Object-Oriented Python

**The University of Texas at Austin**

2016 - 2018

[*Statistics and Econometrics Coursework*] Mathematical Statistics 1, Econometrics 1 (MS) and 2 (PhD), Bayesian Statistical Methods, Longitudinal Data Analysis, Maximum Likelihood Estimation Statistics

[*Transportation Engineering Coursework*] Transportation Systems Management, TransCAD GIS, Transportation Network Analysis, Discrete Choice Methods

**Indian Institute of Technology Bombay**

2012 - 2016

Traffic Analysis and Design, Urban Transportation Planning (in addition to the entire Civil Engineering curriculum)

**REFERENCES**

**Dr. Aruna Sivakumar**

Reader in Consumer Demand Modelling And Urban Systems, Imperial College London  
South Kensington Campus, London SW7 2AZ, U.K.

Email: a.sivakumar@imperial.ac.uk

**Dr. Eric Miller**

Professor and Director, University of Toronto Transportation Research Institute (UTTRI)  
35 St. George St., Toronto, Ontario M5S 1A4, Canada

Email: eric.miller@utoronto.ca

**Dr. Rolf Moeckel**

Associate Professor of Travel Behaviour, Technical University of Munich  
Augustenstr. 44, Munich 80333, Germany

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**Dr. Ahmadreza Faghieh Imani**

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**Dr. Fangce Guo**

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