

Karthik Babu Nattamai Kannan

Cox School of Business, Southern Methodist University, Dallas, TX

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US Permanent Resident

Employment

Southern Methodist University, Cox School of Business, Dallas, TX

Visiting Assistant Professor of ITOM

Aug 2025–Present

Assistant Professor of IT and Operations Management

Aug 2019–Jul 2025

Instructor of IT and Operations Management

Aug 2018–Jul 2019

Tata Consultancy Services (TCS)

Jun 2002–Dec 2011

Technology and process consultant for The Home Depot, Johnson & Johnson, GE, Citigroup

Education

Georgia Institute of Technology, Scheller College of Business

2018

Ph.D. in Information Technology Management

Committee: Yu Jeffrey Hu (co-chair), Sridhar Narasimhan (co-chair), Eric Overby, Saby Mitra, Chris Forman

Anna University Chennai, College of Engineering, Guindy

2002

Bachelor of Engineering, Mechanical Engineering

Research Interests

Artificial Intelligence: Evaluating the impact of generative AI on developer productivity, consumer search behavior, and data-driven decision-making.

Digital Economics: Understanding how digital infrastructure improvements affect educational access, economic opportunity, and digital divides.

Affiliations

Perplexity AI, Fellow

Mar 2025–Aug 2025

SMU DataArts, Donna Wilhelm Research Fellow

2019–2023

National Telecommunications and Information Administration,

2021–2022

Grant Reviewer, Tribal Broadband Connectivity and Connecting Minority Communities Programs

IEEE, Senior Member

Aug 2024–Present

SMU, Faculty Affiliate, Data Science Institute

Aug 2023–Present

American Society for Quality (ASQ), Certified Six Sigma Black Belt

2005

Refereed Journal Publications

1. **Nattamai Kannan, K.B.**, Overby, E. (Georgia Tech), and Narasimhan, S. (Georgia Tech) (2024). “Can Improvements to Mobile Internet Service Help Reduce Digital Inequality? An Empirical Analysis of Education and Overall Data Consumption.” *Management Science*. doi:10.1287/mnsc.2022.03770

Policy Impact: Selected by the FCC to inform national broadband policy – invited to present and formally file this research in the official rulemaking for [Proceeding #23-199: Data Caps in Consumer Broadband Plans](#), directly shaping regulations on data caps that affect millions of low-income and rural households

Media Coverage: [INFORMS press release](#) | [Management Science](#) | [Georgia Tech Research News](#) | [Georgia Tech News Center](#) | [Phys.org](#)

Presentations: Federal Communications Commission, UT-Dallas, SMU Cox, City University of Hong Kong, George Mason, University of Houston, Clemson, Iowa State, Georgia Tech, Conference on the Digital Economy (ISB), CIST, SCECR

Refereed Conference Proceedings

1. **Nattamai Kannan, K.B.** and Taylor, W. (SMU Cox) (2024). “The Impact of Online Learning on Digital and Non-Digital Supplemental Learning Products: A Comparative Empirical Analysis.” *Proceedings of 2024 AMA Marketing and Public Policy Conference*. [Link](#)
2. **Nattamai Kannan, K.B.** and Taylor, W. (SMU Cox) (2024). “The Impact of Online Learning on Digital and Non-Digital Supplemental Learning Products: A Comparative Empirical Analysis.” *Proceedings of 2024 Americas Conference on Information Systems*. [Link](#)

Working Papers

1. “More Words, Less Value? The Hidden Costs of AI-Generated Documentation: Evidence from a Natural Experiment with GitHub Copilot for Pull Requests” with Narayan Ramasubbu (Pitt Business). Preparing for submission to *Management Science*. [SSRN](#)

Scheduled Presentations:

- [Workshop on Information Systems and Economics \(WISE\) 2025](#) at Nashville, TN (December 2025). This is a premier IS-Econ conference with low acceptance rates.
- [INFORMS 2025](#) (October 2025)

Presentations: Wharton’s 3rd Annual Business & Generative AI Conference (San Francisco) 2025, BizAI Conference (UT Dallas) 2025, INFORMS 2024

2. “An Optimization Framework for Reducing Geographic Inequality Through Public-Private Infrastructure Sharing: Applications to Healthcare and Cultural Organizations” with Young Woong Park (Iowa State) and Sridhar Narasimhan (Georgia Tech). Preparing for submission to *Management Science*. [SSRN](#)

Scheduled Presentations:

- **Workshop on Information Technologies and Systems (WITS) 2025** at Nashville, TN (December 2025). This is a premier peer-reviewed IS-Design Science conference with low acceptance rates.
- **INFORMS Workshop on Data Science** (October 2025)

Presentations: Georgia Tech Stellar Vision: Charting the Course of AI in Business 2024, Workshop on AI & Analytics for Social Good (U Maryland) 2024, National Endowment for the Arts 2024, SMU Cox ITOM Brown Bag Seminar 2023, Marketing Science DSI Conference 2023, POMS 2023, INFORMS 2022

3. **“Work-from-Home Effects on Consumption: From Aggregate Patterns to Individual Behavior”** with Bill Dillon (SMU Cox). Acquired proprietary device-level mobile location data from Veraset to extend analysis beyond aggregate patterns. Currently analyzing how work-from-home patterns impact individual consumer behavior. Manuscript preparation in progress. [SSRN](#)

Funding: Received \$5,000 from the Marketing Science Institute (MSI) in December 2021. Data collection supported by a special grant from the National Endowment for the Arts (NEA) to help performing arts organizations recover after the COVID-19 crisis

Presentations: National Endowment for the Arts 2024, POMS 2023, Research Computing Day (SMU) 2022, SMU Data Science Institute 2022, Auburn University 2022

Media Coverage:

- [Webinar](#) to ~200 practitioners from arts organizations (Feb 2022)
- [SMU DataArts: Attendance Prediction](#)
- [SMU DataArts: June 2022 Update](#)
- [SMU DataArts: Spring 2022 Update](#)

4. **“Limits to the Adoption of Technology-Mediated Learning”** with Wayne Taylor (SMU Cox). Under review at *Production and Operations Management*. [SSRN](#)

Presentations: AMCIS 2024, AMA Marketing and Public Policy Conference 2024, AI/ML/BA Conference 2023, MISQ Author Development Workshop 2023, Marketing Science Conference 2022

5. **“GenAI Usage Disclosure in Open-Source Projects: An Ethnographic Analysis”** with Aravind Karunakaran (Stanford). Analysis and manuscript preparation in progress.

Presentations: Wharton’s AI and the Future of Work Conference (May 2025)

6. **“Data-Driven Decision Making in US Non-Profit Sector: A Quasi-Experimental Analysis”**. This study assesses the impact of the Bloomberg Philanthropies Arts Innovation and Management (AIM) program, launched in 2011 as part of the American Cities Initiative. The AIM program provided \$119 million to build the capacity of small and mid-sized nonprofit arts and cultural organizations, piloted in New York City (2011–2013) and expanded to 13 additional cities in 2018. Analysis in progress.

Presentations: Bloomberg Foundation 2023, POMS 2022

Work In Progress

1. **LLM for Non-Verbal Communication:** Design of Generative AI-based Augmentative and Alternative Communication (AAC) Application for Non-speaking Autistic Children
2. **How does Gen AI Impact Product Search in e-Commerce?:** An empirical analysis

Teaching

- **C. Jackson Grayson Endowed Faculty Innovation Award** (2021) – Awarded annually to one tenure-track faculty member for teaching excellence at Cox School of Business
- Active contributor to IS teaching community through invited IT Teaching Innovation Workshop on AI-enhanced curriculum design (University of Delaware 2025, UT-Austin 2024)
- SMU Cox School of Business faculty (2018–Present) | Prior teaching and course development at Georgia Tech (2012–2018)
- Nominated by students for “Honoring Our Professors’ Excellence” award (2023)
- Developing curriculum for newly-launched GenAI course *Generative AI in Business* and updated course *Agentic AI for Database Development*

1. **AI in Business** (Undergraduate, SMU Cox, Fall 2025–Present)

Applied GenAI for business problem-solving including LLM fundamentals, reasoning models, and agentic frameworks. Students learn to build low-code agentic workflows for optimization and natural language database querying, explore business applications and implementation strategies, and evaluate ethical considerations of GenAI deployment.

2. **Database Design and AI-Powered Application Development** (MS Business Analytics, SMU Cox, 2018–Present, Redesigned with focus on GenAI 2024)

Covers traditional RDBMS design (SQL Server, MySQL) and modern vector databases for AI applications. Students learn LLM integration in database applications with Retrieval-Augmented Generation (RAG) systems, full-stack development with Python (Dash) and R (Shiny), and cloud deployment and infrastructure management.

3. **Advanced Decision Models** (MBA Elective, SMU Cox, 2018–Present, Integrated Python in Excel 2023)

Students master Python in Excel for data wrangling and optimization, VBA scripting, and Excel Solver. Course covers linear and non-linear optimization techniques for business decision-making, along with advanced modeling approaches including goal programming, genetic algorithms, and simulation methods.

4. **Information Systems for Management** (Undergraduate, SMU Cox, Spring 2026)

Develops Microsoft Excel proficiency with pathway to Expert certification (MO-210, MO-211), database fundamentals and SQL for data extraction, aggregation, and reporting, and information technology essentials and their strategic role in business management. Fulfills SMU Common Curriculum requirement for Technology Advances and Society.

5. **Data Science** (Undergraduate, Georgia Tech, 2012–2018)

Covered predictive modeling and machine learning with R including regression, classification, and ensemble methods. Students learned data visualization techniques and storytelling with data, along with causal inference methods and experimental design for business analytics.

6. **Data Analytics for Business** (Georgia Tech Online MS Analytics, Summer 2018)

Head Teaching Assistant for Georgia Tech’s first online Business Analytics course

Managed course operations and student support for 500+ online students. Course covered predictive analytics and machine learning using R and Python for classification, regression, and clustering, along with data preparation, feature engineering, and model evaluation best practices.

Awards & Honors

Major Awards & Grants

- **C. Jackson Grayson Endowed Faculty Innovation Award** (2021), Cox School of Business
- **Marketing Science Institute Grant** – \$5,000 (December 2021)
- **President/Dean’s Fellowship**, Georgia Institute of Technology (2012)

Fellowships & Professional Roles

- **Perplexity AI Fellow** (March 2025–August 2025)
- **Donna Wilhelm Research Fellow**, SMU DataArts (2019–2023)
- **Grant Reviewer**, National Telecommunications and Information Administration (NTIA) – Tribal Broadband Connectivity Program and Connecting Minority Communities Pilot Program (2021–2022)
- **Occupation Expert**, O*NET, U.S. Department of Labor (2021)
- Judge, American Society for Quality’s International Team Excellence Award (2009, Charlotte, NC)

Honors & Professional Certifications

- **ICIS Junior Faculty Consortium** participant (2021, Austin, TX)
- **Alpha Iota Delta** (Kappa Chapter) – International Honor Society in Decision Sciences and Information Systems
- **ASQ Certified Six Sigma Black Belt** (2005)

Service

Session Chair

- 2017 INFORMS Annual Conference (Social Media Analytics session)
- 2016 Conference on Information Systems and Technology (CIST)

Committee Memberships

- Program Committee, Conference on Information Systems and Technology (CIST) – 2024, 2025
- Search Committee, DataArts Research Director (May 2024–Aug 2024; Nov 2022–Jan 2023)
- Data Science Cluster Hire Working Group, representing Meadows School of Arts (Summer 2022)
- ManeFrame III Planning Committee, Center for Scientific Computation (2021–2022) – Instrumental in selecting NVIDIA DGX SuperPOD
- Program Committee, Pre-ICIS SIGBPS 2019 Workshop on Blockchain and Smart Contract

Peer Review

Journals: *Management Science*, *MIS Quarterly*, *Production and Operations Management*, *Information Systems Research*, *Science*, *Review of Industrial Organization*, *Journal of Database Management*, *Electronic Commerce Research*

Conferences: Conference on Information Systems and Technology (CIST), International Conference on Information Systems (ICIS), Americas Conference on Information Systems (AMCIS)

Professional Memberships

Association of Information Systems (AIS) | Institute for Operations Research and the Management Sciences (INFORMS) | Institute of Electrical and Electronics Engineers (IEEE) | American Association for the Advancement of Science (AAAS)

Selected Conferences, Workshops, and Invited Presentations

2025: INFORMS Annual Meeting, Wharton Business & Gen AI Conference, Wharton AI & Future of Work Conference, Georgia Tech Stellar Vision: Charting the Course of AI in Business, Workshop on AI & Analytics for Social Good (U Maryland), National Endowment for the Arts, IT Teaching Innovation Workshop (U Delaware)

2024: Federal Communications Commission, INFORMS Annual Conference, AMCIS (Salt Lake City), AMA Marketing & Public Policy Conference, IT Teaching Innovation Workshop (UT-Austin), AI, ML, & BI Conference (Fox School of Business), National Endowment for the Arts

2023: MISQ Reviewer & Author Development Workshops, Bloomberg Philanthropies, Marketing Science DEI Conference (SMU), AI/ML/BA Conference

2022: INFORMS Annual Conference, Marketing Science Conference, Production and Operations Management Conference, SMU Research Computing Day, SMU Data Science Institute Seminar, ICIS Junior Faculty Consortium (Austin)

2020–2021: INFORMS Annual Meeting (Virtual), Auburn University (invited seminar), UT-Dallas (invited seminar)

2016–2018: Conference on Information Systems and Technology (Houston, Nashville), INFORMS Annual Meeting (Houston, Nashville), POMS (Orlando), Winter Conference on Business Intelligence (Snowbird), NBER Digitization Workshop (Stanford), Workshop on Quantitative Marketing and Structural Econometrics (St. Louis), WISE (Dublin)

Technical Expertise

Generative AI & LLMs: OpenAI API, Claude API, Anthropic, LangChain, LlamaIndex, Prompt Engineering, Agentic Workflows, RAG Systems

Machine Learning & Analytics: Deep Learning, Natural & Field Experiments, Causal Inference, Econometric Modeling

Programming & Development: Python, R, SQL, Java, JavaScript, D3.js, HTML/CSS

Data & Databases: Vector Databases (Pinecone, Weaviate), RDBMS (SQL Server, MySQL, PostgreSQL), NoSQL

Application Development: R Shiny, Python Dash, Streamlit, Full-stack Web Applications

Statistical & Analytical Software: Stata, SAS, MATLAB, SPSS

Cloud & Infrastructure: AWS, Azure, Docker, Git/GitHub