

# Andrey Makhanov

Ph.D. Candidate in Operations Management and Data Analytics  
UNC Kenan-Flagler Business School, University of North Carolina at Chapel Hill  
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## Education

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**University of North Carolina at Chapel Hill, Kenan-Flagler Business School** 2021–Present  
*Ph.D. in Business Administration* *Operations Management and Data Analytics*

**Georgia Institute of Technology** 2023–2026  
*M.S. in Cybersecurity* *Information Security*

- GPA: 4.0/4.0.

**Georgia Institute of Technology** 2018–2022  
*M.S. in Analytics* *Business Analytics*

- GPA: 3.9/4.0.

**University of North Carolina at Chapel Hill, Kenan-Flagler Business School** 2019–2021  
*M.B.A., STEM-designated*

- Beta Gamma Sigma; top 20% of MBA students.
- Concentrations included Operations, Technology, Business Analytics, Management Science, Finance, and Consulting.

**Georgia Institute of Technology** 2017–2018  
*M.S. in Computer Science* *Machine Learning*

- GPA: 4.0/4.0; additional emphasis in cybersecurity.

**High Point University** 2010–2014  
*B.S. in Physics, B.S. in Mathematics, and B.S. in Computer Science* *Minor in Statistics*

- University Honors Program.

## Selected Doctoral and Graduate Coursework

Stochastic modeling; game theory and empirical analysis; applied econometrics; optimization; optimization for machine learning and neural networks; machine learning in econometrics; Bayesian statistics; generalized linear models; structural models; microeconomics; operations management.

## Research Interests

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Sustainable operations and supply chain management; technology adoption and policy; electric-vehicle markets and infrastructure; artificial intelligence and machine learning for business; business analytics; data-driven decision making; digital transformation; AI governance and cybersecurity.

## Research

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### Working Papers

1. **Makhanov, A.**, Sunar, N., & Swaminathan, J. M. *Automobile Franchise Laws and Electric Vehicle Adoption: Evidence from Washington State.*
2. **Makhanov, A.**, Sunar, N., & Swaminathan, J. M. *Charging Infrastructure, Income, and Electric Vehicle Adoption: Evidence from Washington State.*
3. Huang, H., Narayanan, S., Swaminathan, J. M., & **Makhanov, A.** *Supply Base Diversity and Its Impact on Carbon Emission Reduction Strategies.*

## Peer-Reviewed Publication

1. Makhanova, N., Morgan, A. P., Kayashima, Y., **Makhanov, A.**, Hiller, S., Zhilicheva, S., Xu, L., Pardo-Manuel de Villena, F., & Maeda, N. (2017). *Genetic architecture of atherosclerosis dissected by QTL analyses in three F2 intercrosses of apolipoprotein E-null mice on C57BL6/J, DBA/2J and 129S6/SvEvTac backgrounds*. *PLOS ONE*, 12(8), e0182882. <https://doi.org/10.1371/journal.pone.0182882>.

## Conference Presentations

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- INFORMS Annual Meeting, presenter, 2024 and 2025; scheduled presenter, 2026.
- Production and Operations Management Society Annual Conference, presenter, 2025 and 2026.
- Manufacturing and Service Operations Management Conference, presenter, 2026.
- Decision Sciences Institute Annual Conference, presenter, 2025.
- Dataverse Community Meeting, Harvard University, presentation of CORE-RE, 2019.
- Joint Physics Conference of SPS Zone 5 and the North Carolina Section of the American Association of Physics Teachers, presenter and award recipient, 2012.

## Teaching Experience

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### UNC Kenan-Flagler Business School

May–June 2024

*Instructor, Business Analytics (BUSI 410)*

- Taught undergraduate business analytics with emphasis on quantitative analysis, data-driven decision making, business modeling, and managerial applications of analytics.

### UNC Kenan-Flagler Business School

2021–2026

*Teaching Assistant*

*Analytics, Operations, and Supply Chain Management*

- Supported repeated offerings of Data: Tools & Analytics; Business Modeling: Prescriptive Analytics; Undergraduate Business Analytics; Introduction to Operations Management; and Supply Chain Management.
- Evaluated assignments, examinations, and analytics projects and supported instruction for undergraduate, graduate, and professional business students.
- Assisted with quantitative, technology-enabled course delivery and student support across analytics and operations curricula.

## Fellowships, Honors, and Awards

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- Fellowship, UNC Sustainability Center, 2026.
- UNC Kenan-Flagler Merit Fellowship, 2019.
- Kenan Institute Leadership Award, 2021.
- Beta Gamma Sigma, business honor society, 2021.
- Kenan Scholar, Kenan Institute of Private Enterprise, 2019.
- Dean's Fellows Program, UNC Kenan-Flagler Business School, 2019.
- First Place, UNC Security and More Cybersecurity Challenge, 2022 and 2023.
- Richard Tapia Celebration of Diversity in Computing Scholarship, 2017 and 2018.
- Best Undergraduate Student Paper, Poster, and Presentation Award, Joint Physics Conference of SPS Zone 5 and the North Carolina Section of the American Association of Physics Teachers, 2012.

## Academic Service and Leadership

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- Ph.D. Student Body Co-President, UNC Kenan-Flagler Business School, 2023–present.
- MBASA Vice President of Communications and Technologies, UNC Kenan-Flagler, 2020–2021.
- Dean's Fellows Project Leader, UNC Kenan-Flagler; led a team advising associate deans on a proposed academic program.

- MBA leadership roles included Executive Vice President, Asian Business Club; Vice President of Finance, General Management Club; Vice President of Learning and Development, Adam Smith Society; Vice President of Social Affairs, International Business Club; and MBA Ambassador.

## Research and Industry Experience

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**UNC Kenan Institute / UNC Institute for Private Capital** 2020–2021

*Business Intern* *Research Infrastructure and Private Equity Data* Developed automation for acquiring and transcribing research-related video content to improve search and review workflows.

**UNC Odum Institute** 2019

*Systems Programmer* *Research Computing and Reproducibility* Designed CORE-RE, a Kubernetes-, BinderHub-, JupyterLab-, and GitLab-based reproducible research environment; developed DataverseML and related research-workflow tools.

**JADE Learning / TPC Training** 2016–2019

*Software Engineer, Security Analyst, and Full-Stack Developer* *Educational Technology* Built web applications, analytics tools, identity-verification features, security modules, and automated data workflows for online professional education platforms.

**UNC Pharmacology Lab** 2014–2016

*IT Programmer / Application Analyst* *Scientific Computing* Developed machine-learning methods, scientific web applications, data-aggregation tools, and research workflow software.

## Technical Expertise

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|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Methods</b>            | Econometrics, structural models, stochastic modeling, optimization, machine learning, Bayesian statistics, generalized linear models, reinforcement learning, natural language processing. |
| <b>Programming</b>        | Python, R, SQL, Julia, MATLAB, Java, C#, C/C++, JavaScript/TypeScript, PHP, and Ruby.                                                                                                      |
| <b>Analytics and ML</b>   | PyTorch, TensorFlow, Keras, scikit-learn, pandas, NumPy, SciPy, tidyverse, caret, randomForest, ggplot2, Tableau, ARENA, Excel, WRDS/Compustat.                                            |
| <b>Data and Cloud</b>     | PostgreSQL, MySQL, SQL Server, SQLite, MongoDB, Redis, Neo4j, Docker, Kubernetes, AWS, Azure, Google Cloud, Git, GitHub, and GitLab.                                                       |
| <b>Research Computing</b> | Jupyter, JupyterLab, BinderHub, Dataverse tooling, reproducible computational environments, and high-performance computing workflows.                                                      |

## Certifications and Professional Development

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- Microsoft Certified: Azure AI Fundamentals, 2023; Microsoft Azure Fundamentals, 2021.
- Lean Six Sigma Black Belt, 2022; Yellow Belt, 2022; Green Belt of Six Sigma Methodology, 2021.
- Certified ScrumMaster, Scrum Alliance, 2018–2026.
- NVIDIA Deep Learning Institute training in deep learning, transformer-based NLP, conversational AI, and multi-GPU training.
- AI for Science on Supercomputers, Argonne National Laboratory, 2022.
- Google Analytics Certification, 2023; Google Analytics Individual Qualification, 2021.
- CITI Human Research Group 3 certification, 2019–2029.

## Selected Additional Professional Activities

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- NVIDIA workshop participant, 2024.
- NSA Codebreakers Challenge and Huntress CTF participant, 2023.
- Quantum Machine Learning for Finance, Bayes Business School, 2022.
- Adobe Analytics Challenge and Adam Smith Society Case Competition participant, 2020.

- Venture Capital Investment Competition, Innovate Carolina Competition, and Deloitte Case Competition participant, 2019.

## Professional Affiliations

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Beta Gamma Sigma; ISACA, Research Triangle Chapter; Scrum Alliance.

## Languages

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English and Russian: fluent; Ukrainian: intermediate; Catalan and French: beginner/intermediate; Spanish and Mandarin: beginner.

## Professional References

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### **Jayashankar M. “Jay” Swaminathan**

GlaxoSmithKline Distinguished Professor of Operations

UNC Kenan-Flagler Business School

### **Nur Sunar**

Professor of Operations and Sarah Graham Kenan Scholar

UNC Kenan-Flagler Business School

### **Sriram Narayanan**

John H. McConnell Endowed Chair of Business Administration and Professor of Supply Chain Management  
Broad College of Business, Michigan State University