

Jinho Cha, Ph.D.

Applied AI & Data Research Scientist

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10

peer-reviewed articles since 2025

\$2.7M+

funded R&D portfolio

119,390

records in large-scale ML study

33.22%

mean realized-profit improvement

RESEARCH PROFILE

Applied AI and data research scientist combining **machine learning, statistical inference, stochastic modeling, and optimization** to solve complex real-world decision problems. Track record of leading funded R&D, designing rigorous empirical studies, and translating research into measurable operational impact. Research spans predictive–prescriptive analytics, AI evaluation, robust decision making, healthcare analytics, revenue management, and technology-enabled decision systems.

Selected Publication Venues: *IIE Transactions* • *Computers & Industrial Engineering* • *Journal of Industrial and Management Optimization* • *BMC Public Health*.

TECHNICAL SKILLS

Programming & Data: Python, R, pandas, NumPy, SQL, Jupyter, Java

AI/ML: scikit-learn, LightGBM, XGBoost, PyTorch, TensorFlow, NLP/Text Mining

Methods: Predictive Modeling, Statistical Inference, Calibration, Simulation, Robust Optimization

Platforms: AWS (S3, EC2, SageMaker); reproducible analytics and model evaluation workflows

SELECTED RESEARCH IMPACT

- **Predictive–Prescriptive ML:** Built reservation-level cancellation models on **119,390 hotel bookings** and integrated calibrated risk estimates into rolling booking control, improving mean realized profit by **33.22%**; published in *Computers & Industrial Engineering* (2026).
- **Robust Risk Modeling:** Developed Negative Binomial and distributionally robust decision models for clustered, overdispersed risk; **two *Journal of Industrial and Management Optimization* articles published in 2026.**
- **Dynamic AI Decision Systems:** Developed stochastic optimization and adaptive switching methods for changing quality, latency, reliability, transition costs, drift, and shocks; related work **published in *JIMO* and accepted in *IIE Transactions* (2026).**
- **Healthcare Decision Analytics:** Built a 10-year stochastic simulation calibrated with MEPS and NHANES data to evaluate adherence, intervention timing, cost, and ROI; **published in *BMC Public Health* (2025).**

PROFESSIONAL EXPERIENCE

Gwinnett Technical College

Faculty, Computer Science

Conduct AI/data research while teaching programming and computational problem solving; **Co-PI on two NITIC-funded AI/education projects** (\$20K combined).

Lawrenceville, GA

2025 – Present

Korea Research Institute for Defense Technology Planning and Advancement (KRIT)

Senior Researcher

Led data-intensive R&D spanning analytics, simulation, intelligent systems, logistics, and technology decision support; managed a **\$1M national R&D program**.

South Korea

2021 – 2025

Korea Military Academy

Assistant Professor, Mathematics

Conducted quantitative research and taught probability, statistics, linear algebra, linear programming, and optimization.

Seoul, South Korea

2017 – 2021

Republic of Korea Army Headquarters / Joint Chiefs of Staff

Military Operations Analysis / Operations Research

Applied simulation, operational data analysis, and quantitative decision methods to large-scale mission-critical planning and multinational exercises.

South Korea

Prior to 2017

FUNDED R&D LEADERSHIP

\$1.0M Project Manager — National R&D program from problem definition and analytical design through validation and implementation.

\$750K Co-PI — Intelligent coastal-surveillance R&D integrating sensing, analytics, AI learning models, and decision support.

\$970K+ additional funded R&D — PI/Co-PI/Co-PM roles in simulation, training analytics, personnel decision systems, and two 2025–2026 NITIC AI-education mini-grants.

EDUCATION & RECOGNITION

Ph.D., Industrial Engineering, Clemson University • **M.S., Industrial Engineering**, University of Florida • **M.S., Industrial Engineering**, Texas A&M University • **B.S., Electronic Engineering**, Korea Military Academy

Presidential Commendation, Republic of Korea (2025) • **Ministerial Commendation**, Ministry of National Defense (2023) • **Army Chief of Staff Commendation** (2019)