(ADAM) CHEOL WOO KIM

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ACADEMIC APPOINTMENTS

Harvard University — Boston, MA
Postdoctoral Fellow in Computer Science — *Sep 2024 - Present*
- Advisor: Milind Tambe

EDUCATION

Massachusetts Institute of Technology — Cambridge, MA
PhD in Operations Research ; GPA: 5.0/5.0 — *Aug 2024*
- Advisor: Dimitris Bertsimas
- Thesis: *Predictive and Prescriptive Trees for Optimization and Control Problems*

Seoul National University School of Law — Seoul, Republic of Korea
J.D. Candidate (withdrew to pursue PhD at MIT) — *Feb 2019 - Jul 2019*

Seoul National University — Seoul, Republic of Korea
B.A. in Economics (Summa Cum Laude); Major GPA: 4.24/4.30 — *Feb 2019*
- Concentration in Mathematical Economics and Microeconomic Theory

RESEARCH INTERESTS

AI for Decision-making, AI Alignment, AI Safety, Human-in-the-Loop Systems,
ML-accelerated Optimization (Learning for Optimization)

PAPERS

*: alphabetical or co-first author

Conference and Workshop Papers

1. *Incentive-Aware AI Safety via Strategic Resource Allocation: A Stackelberg Security Games Perspective*
   Cheol Woo Kim*, Davin Choo*, Tzeh Yuan Neoh, Milind Tambe
   International Conference on Autonomous Agents and Multiagent Systems (AAMAS), 2026.

2. *Preference Robustness for DPO with Applications to Public Health*
   Cheol Woo Kim*, Shresth Verma*, Mauricio Tec*, Milind Tambe
   AAAI Conference on Artificial Intelligence (AAAI), 2026.

3. *Lightweight Robust Direct Preference Optimization*
   Cheol Woo Kim*, Shresth Verma*, Mauricio Tec*, Milind Tambe
   NeurIPS Workshop: Reliable ML from Unreliable Data, 2025.

4. *Navigating the Social Welfare Frontier: Portfolios for Multi-objective Reinforcement Learning*
   Cheol Woo Kim*, Jai Moondra*, Shresth Verma, Madeleine Pollack, Lingkai Kong, Milind Tambe, Swati Gupta
   International Conference on Machine Learning (ICML), 2025.

5. *Robust Optimization with Diffusion Models for Green Security*
   Lingkai Kong, Haichuan Wang, Yuqi Pan, **Cheol Woo Kim**, Mingxiao Song, Alayna Nguyen, Tonghan Wang, Haifeng Xu, Milind Tambe
   Uncertainty in Artificial Intelligence (UAI), 2025.

6. *LLM-based Agent Simulation for Maternal Health Interventions: Uncertainty Estimation and Decision-focused Evaluation*
   Sarah Martinson, Lingkai Kong, **Cheol Woo Kim**, Aparna Taneja, Milind Tambe
   AAMAS Workshop on Autonomous Agents for Social Good, 2025.

Journal Papers (Including Under Revision)

1. *Optimal Control of Multiclass Fluid Queueing Networks: A Machine Learning Approach*
   Dimitris Bertsimas*, **Cheol Woo Kim***
   Operations Research (Minor Revision), 2024.
2. *Optimal Control of Fluid Restless Multi-armed Bandits: A Machine Learning Approach*
   Dimitris Bertsimas*, **Cheol Woo Kim***, José Niño-Mora*
   Machine Learning (Major Revision), 2024.
3. *A Machine Learning Approach to Two-stage Adaptive Robust Optimization*
   Dimitris Bertsimas*, **Cheol Woo Kim***
   European Journal of Operational Research, 2024.
4. *A Prescriptive Machine Learning Approach to Mixed Integer Convex Optimization*
   Dimitris Bertsimas*, **Cheol Woo Kim***
   INFORMS Journal on Computing, 2023.

WORK EXPERIENCE

Microsoft Research Redmond, WA
Research Intern - Machine Learning and Optimization Group *May 2023 - Aug 2023*
- Mentors: Ishai Menache, Marco Molinaro, Konstantina Mellou

Permanent Mission of the Republic of Korea to the United Nations New York, NY
Research Intern - UN General Assembly Group *Jan 2014 - Apr 2014*

TEACHING EXPERIENCE

Developed course materials, led recitations, and held office hours for the following courses:

TA, The Analytics Edge (MIT 15.071) *Spring 2024*
- MBA course on statistics, machine learning, optimization, and data science.

TA, Optimization Methods (MIT 6.7200J/15.093J) *Fall 2022*
- Graduate course on linear, nonlinear, combinatorial, robust, and semi-definite optimization.

TA, Introduction to Mathematical Programming (MIT 6.251J/15.081J) *Fall 2021*
- PhD-level course on linear, nonlinear, discrete, combinatorial, robust, and semi-definite optimization.

TA, Robust Modeling, Optimization, and Computation (MIT 1.142J/15.094J) *Spring 2021*
- Graduate course on theory and applications of robust optimization.

INVITED TALKS

KAIST Graduate School of Data Science Special Seminar *Aug 2024*
- *Machine Learning for Optimization and Control Problems*

INFORMS Annual Meeting *Oct 2023*
- *Optimal Control of Fluid Restless Multi-armed Bandits: A Machine Learning Approach*

REVIEWER SERVICES

Journal: Journal of Machine Learning Research, INFORMS Journal on Computing, INFORMS Journal on Optimization, European Journal of Operational Research, Transportation Science
Conference: AAAI 2026

AWARDS AND HONORS

Kwanjeong Educational Fellowship *Sep 2019 – Feb 2025*
- Merit-based PhD scholarship.

Eminence Scholarship *Aug 2017*
Department of Economics, Seoul National University Seoul, Republic of Korea
- Awarded to top 1% in the economics department.

SKILLS

- **Programming**: Python (PyTorch, Scikit-learn), Julia (JuMP, Gurobi, Mosek), R
- **Languages**: Korean (Native), English (Fluent)