

PROFESSIONAL PROFILE

PhD Economist and trusted technical advisor with 7+ years' experience shaping organizational strategy through advanced analytics and causal inference. At Amazon, owned end-to-end initiatives generating \$224M+ in cost savings, translating ambiguous business challenges into scalable analytical solutions. Recognized for defining methodological standards adopted across teams, influencing VP-level decisions, and building cross-functional partnerships spanning benefits, clinical, pharmacy, and technology organizations. Track record of mentoring economists through promotion cycles and scaling scientific approaches enterprise-wide.

PROFESSIONAL EXPERIENCE

Amazon | Arlington, VA

Economist, PXTCS Benefits Research Team | 2023–Present

Strategic Initiative Ownership & Executive Influence

- Owned end-to-end development of Medical Plan Enrollment Forecasting Model, pioneering innovative methodology that achieved <1% prediction error and generated \$205M in cost savings; reduced strategic analysis cycle from 3 months to hours
- Shaped VP-level strategy through 4 business memos delivered to annual Benefits Review Committee, directly influencing enterprise benefits decisions
- Defined strategic direction for provider-network cost-control evaluation (tiered-provider and narrow-network approaches). Insights directly informed BXT's strategy
- Optimized fertility benefits program design, delivering \$19M in annual savings while maintaining employee value proposition

Organizational Capability Building & Measurement Infrastructure

- Established organizational measurement standard by creating Downstream Impact Metrics Framework for internal A to Z Benefits platform—developed when leadership lacked clarity on measuring platform value—now guiding director-level strategic decisions with 30+KPIs across discovery, communication, and value creation.
- Created Long-term Economic Value (LEV) methodology, enabling data-driven investment decisions by connecting immediate engagement to long-term health outcomes and cost savings.

Cross-Functional Technical Leadership

- Set methodological standards for causal inference across benefits evaluation: designed A/B testing frameworks, staggered rollout analyses, difference-in-differences, synthetic controls, and instrumental variable approaches.
- Drove Personalized Benefits Recommendations initiative (self-identified opportunity), connecting low benefits awareness to cost inefficiencies and developing solution addressing cost management, employee satisfaction, and program effectiveness simultaneously
- Led Medical Plan Selection Gap Analysis, reframing organizational approach from reducing plan options to improving cost information presentation; findings evolved into broader "Personalized Journey" initiative
- Serve as science lead for weight management initiatives (2024-2025), providing critical vendor evaluation during RFP process and designing ROI analysis for GLP-1 medication and lifestyle management service coverage expansion across Clinical Excellence, Pharmacy, and third-party vendor teams.
- Identified \$2.3M savings opportunity through strategic analysis of 9am Health cardiometabolic benefit enrollment

Process Innovation & Scalable Solutions

- Pioneered survey distribution mechanism through internal training platform, more than doubling response rates to 10%; recognized in PXTCS Innovation Accelerator (August 2024)

- Established best practices for conjoint survey design now adopted by multiple PXT teams, demonstrating commitment to scaling scientific approaches enterprise-wide
- Led campaign effectiveness analyses comparing enrollment patterns between campaign-exposed and organic discovery cohorts to quantify platform visibility ROI

Amazon | Arlington, VA

Economist, PXTCS Compensation & Benefits | 2020-2022

- Influenced VP-level wage decisions through causal impact analyses measuring effects of hourly wage changes and internal transfer policies on attrition, hiring, and productivity (Difference-in-Differences, Synthetic DID)
- Drove 401(k) matching policy for student loan payments – analysis demonstrated value exceeding hourly wage increases, directly influencing enterprise-wide adoption
- Led five enterprise conjoint surveys (Benefits, Compensation, Virtual Care, Health Benefits, Earth's Best Employer) identifying key drivers of hiring and retention; established survey best practices now documented in internal Wiki

Amazon | Seattle, WA

Economist, Device Economics Team | 2019-2020

- Built foundational expertise in conjoint analysis and demand forecasting models for Amazon devices
- Developed consumer preference models informing product pricing and feature prioritization.

Technical Leadership & Mentorship

- Conducted 70+ technical interviews and promotion assessment as Structural Economist Interviewer
- Mentored economists through L4 to L5 progression
- Managed 2 intern projects resulting in return offers
- Served as presenter and reviewer at internal conference (AMLC and Economics Summit, 2023-2024)

EDUCATION

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|--------------------------|--------------------------|--------------------------|------|
| • Ph.D. Economics | University of Washington | Seattle, WA | 2019 |
| • M.S. Applied Economics | University of Minnesota | Minneapolis, MN | 2014 |
| • B.A. Economics | Sogang University | Seoul, Republic of Korea | 2010 |

PRESENTATIONS AND SELECTED RESEARCH PUBLICATIONS

- Amazon internal annual conferences, 2023-2024 AMLC and Economics Summit
- N. Bak, D. Kim, C. Cho, "Consumer Learning and Package Size in Dynamic Brand Choice," presented at high-impact conferences such as the 2023 INFORMS Marketing Science and Annual Meetings, the 2021 Econometrics Society Meetings, and the 2023 International Industrial Organization Conference [[Paper](#)]
- N. Bak, D. Kim, "Aggregate Fluctuations from Firm Comovement," Revise and resubmit requested in the **Journal of Monetary Economics** [[Paper](#)]
- N. Bak, D. Kim, M. Mehra, "Home Market Effects and Increasing Returns with Non-constant Marginal Costs," **Journal of Economic Geography**, Vol. 24(6), 2024, Pages 871-885 [[Paper](#)]

SKILLS

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|-------------------------------|---|------------------------|--------------------|
| • Professional Skills: | Creative Problem-Solving | Research Management | Strategic Thinking |
| • Technical Skills: | Causal Inference (DID, Synthetic Controls, Propensity Matching) | | |
| | Discrete Choice Model | Machine Learning | Bayesian Modeling |
| | Conjoint Analysis | Survey Design/Analysis | |
| • Programming: | Python (Polars, Scikit-learn, pandas, NumPy) | | SQL |
| | Sawtooth | Qualtrics | R, STATA |

PERSONAL INFORMATION

Nationality: South Korean | U.S. Permanent Resident