Denise Cerna

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Education

University of California, Berkeley – CA, USA Aug 2023 – Expected 2028

Ph.D. in Industrial Engineering and Operations Research

- Advisor: Prof. Chiwei Yan
- Minors in Mechanism Design and Reinforcement Learning.
- First-year *M.Sc. in Industrial Engineering and Operations Research.*

University of California, Davis – CA, USA Sep 2019 – Jun 2023

B.Sc. in Mathematical Analytics and Operations Research

B.A. in Economics (Behavior and Strategy Specialization)

- Thesis on Unawareness in Stackelberg Security Games, supervised by Prof. Burkhard Schipper.

Research

Cerna, D., Yan, C., Ma, H., An Equilibrium Solver for a Dynamic Queueing Game (ssrn link)

- Published in *Proceedings of the 26rd ACM Conference on Economics and Computation (EC'25).* pp.666-666.
- Introduced a gradient-based solver for general dispatch policies with closed-form updates, which computes agents' equilibrium acceptance, entry, and reneging strategies as functions of queue length and queue position.
- Applications: Assigning rideshare trips in airport queues and deceased donor organs in transplant waitlists.

Work Experience

Stryker – Dallas, TX Summer 2022

Finance Data Science Intern

- Built a Python-based ML pipeline and supporting documentation to classify high-risk balance sheet accounts.
- Drove communication with key stakeholders to guide requirements and accelerate Data Lake development.
- Used K-means clustering to analyze and categorize product SKUs where sales are difficult to predict.

REU - Data Science and Optimization - Davis, CA Summer 2021

Research Assistant

- Research Assistant; Principal Investigator: Prof. Shiqian Ma.
- Ran numerical experiments for the classification results of K-means clustering on variously sized data sets in order to tune the parameters of an approximation algorithm using an ADMM approach.

Teaching

Graduate Student Instructor

- Logistics Network Design and Supply Chain Management (INDENG 153) Fall 2024, 2025
- Supply Chain and Logistics Management (INDENG 253) Spring 2025

Awards

- Duryea Family Fellowship 2023–2024
- Yueh-Jing Lin Award (UC Davis Mathematics) 2022–2023
- Citation for Outstanding Performance (UC Davis Mathematics) 2022–2023
- Departmental Citation (UC Davis Economics) 2022–2023
- Regent's Scholarship (Prestigious Undergraduate Merit Scholarship) 2019–2023
- University Honors Program 2019–2023

Personal

- **Computer Skills:** Python, SQL, CPLEX, LaTeX, GitHub.
- **Coursework:** Linear Programming, Nonlinear Programming, Applied Stochastic Processes, Microeconomic Theory, Production Planning and Logistics Models, Dynamic Programming, Game Theory, Mechanism Design, Queueing.
- **Languages:** English (native), Czech (native), Slovak (native), French (intermediate).
- **Other:** Avid rock climber, skier, cyclist, and backpacker.