LLUVIA (WEI-JIA) JING

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SUMMARY

Data Scientist and Operations Research Specialist with 6+ years of research experience in supply chain optimization, stochastic modeling, and generative machine learning, including LLMs. Proven track record of delivering actionable, cost-efficient solutions across diverse sectors—Fidelity Investments, USAID, and Hitachi—by integrating mathematical modeling, AI, and scenario analysis into business decision-making. Proficient in Python, R, Gurobi, and advanced analytics frameworks. Background includes 3 years of industrial design and product development, bringing a unique blend of systems thinking and user-centric innovation. Adept at collaborating with cross-functional teams to build end-to-end decision support tools and drive strategic insights. Actively seeking roles at the intersection of data science, optimization, and business strategy.

EDUCATION

Northeastern University — Boston, MA
Ph.D. and M.S. in Industrial Engineering | Advisor: Prof. Ozlem Ergun — April 2025

Awards:

- Doing Good with Good OR, Second Place, Student Paper Competition, INFORMS annual conference 2019
- John and Katherine Cipolla Graduate Merit Award, Northeastern MIE department 2019

Relevant Coursework Highlights:

- Logistics, Warehouse and Scheduling
- Inventory Management
- Revenue Management
- Deterministic & Probabilistic OR
- Network Analysis / Advance Optimization
- Statistical and Data Analysis

Beijing Institute of Technology - (BIT) & — Beijing, China
Universidad Politécnica de Cataluña / Barcelona Tech - (UPC) — Barcelona, Spain
B.S. Industrial Design and Product Development — 2016

Relevant Coursework Highlights:

- Material and Manufacturing Process
- Mechanical and Structural Design
- CAD and product design
- User Interactive Design
- Human Factor Engineering
- Market and Requirement Investigation

SKILLS

Programming Languages: Python, R, C
Software: AMPL, GUROBI, MATLAB, Microsoft Office, VB, LINGO, Nvivo, SharePoint, 3Ds Max, Rhinoceros, SolidWorks, Autodesk CAD, Autodesk Maya, Adobe Photoshop, Adobe After Effects
Laboratory: One year experience in Chemistry & Physics lab, three-year experience in Design lab/studio.
Languages: Fluent in Mandarin Chinese and English, intro level for Spanish and Portuguese.

RESEARCH AND PROFESSIONAL EXPERIENCES

Fidelity Investment – AI Center of Excellence — Boston, MA
Data Scientist — Jan 2024 – July 2024

- **Research and Development**: Conducted research, data exploration, and feasibility checks for Retrieval Augmented Generation (RAG) applications, including the development of a self-contained Question-Answering (QA) RAG pipeline.
- **Pipeline Refine and Evaluation:** Refined the QA RAG pipeline with reranked, hybrid retrieval methods, and various well-defined evaluation metrics, enhancing retriever systems for improved performance.
- **What-if Analysis**: Performed what-if analysis for branch workforce optimization, supported by synthetic data generation and post-analysis to identify and quantify operational efficiency gaps, informing strategic improvements.

Hitachi - Industrial AI Lab — San Francisco, CA
Visiting Research Scientist — July 2022 – April 2023

- **Literature Review:** Conducted literature reviews on Supply Chain Management (SCM), Supply Chain Resilience (SCR), IoT and AI applications, identifying cutting-edge research areas.
- **Strategic Frameworks Development**:
  - SCM and Risk Management: Integrated risk management with SCM operations.
  - SCR Strategies: Formulated strategies to bolster supply chain resilience.
  - Mapping SCR Strategies: Linked SCR strategies with specific risk factors and industry challenges.
- **Stochastic Model Development:** Designed and implemented a multi-stage stochastic model for resilient supplier selection, validated through a detailed case study. Filed a patent for leveraging deep reinforcement learning framework addressing to solve the problem.

Northeastern University — Boston, MA
Graduate Research Assistant — Sep 2019 – May 2025
United States Agency for International Development (USAID) Food for Peace Program — Jan 2019 – Jul 2021

- **Supply Chain Optimization Work Stream:** Led the supply chain optimization aspect of the Food Aid Quality Review project, focusing on descriptive analytics and prescriptive optimization models to enhance the efficiency and effectiveness of food aid delivery.
- **Collaborative Efforts**: Maintained frequent and detailed interactions with USAID personnel. Co-developed research questions aligned with USAID's operational needs and strategic objectives.
- **Data Analysis and Deterministic Models**: Conducted comprehensive data cleaning, pre-processing, and analysis to understand operational decisions within the food aid system. Developed an end-to-end supply chain optimization model for Ethiopia. Used a rolling horizon algorithm to evaluate Advance Demand Information and Commodity Pre-positioning Strategies, showing improved cost-efficiency and on-time delivery compared to historical operations.
- **Stochastic, Deep Learning and Predictive Models:** Developed a multi-stage stochastic programming model to optimize warehouse locations and safety stock levels, integrating pre- and post-disaster strategies. Used C-VRAE and LSTM networks for demand analysis and scenario planning, enhancing the resiliency and responsiveness of USAID's global food aid operations. Built, trained and tuned predictive models to match demand scenario patterns with optimal decision clusters and therefore achieved end-to-end optimization.
- **Tool Development**: Single-handedly developed the Supply Chain Optimization Tool (SCOT) for USAID, incorporating operational, tactical, and strategic scenario planning functionalities. This tool automated analysis and visualizations of optimal decisions, tailored to different supply chain management issues.
- **Training and Implementation:** Organized and conducted training sessions and workshops for USAID users, providing comprehensive user manuals and video instructions. Facilitated weekly tutorials in the final project phase to ensure effective tool usage for operational, tactical, and strategic decision-making.
- **Impact and Reporting:** Demonstrated SCOT's impact on efficiency gains and cost-effectiveness through various scenarios and case studies. Authored detailed reports and presented findings, receiving positive feedback and recognition from USAID.

BMW Group - BMW China Services Ltd. — Beijing, China

R&D center, Business development, Strategy and Projects
Project Management Intern, Business Analysis Trainee — Jun 2016 – Dec 2016

- **Process Coordination:** Coordinated internal manufacturing processes in SAP and conducted external supplier comparisons, preparing presentations for VP conferences.
- **Procurement Enhancement:** Enhanced procurement procedures, resulting in a 10% budget savings through data entry validation utilizing Excel-based tools.

- **Problem Solving:** Resolved interface programming issues across five departments in Spare Parts Supply projects, developing fast problem-solving skills.
- **Market Data Analysis:** Collected and analyzed market data on the hybrid vehicle market in China using Excel and Python, producing a 25-page KPI report with 100% positive feedback.
- **Workshops and Q&A:** Prepared and conducted 27 workshops for suppliers and VPs, proposing and organizing Q&A meetings with German visitors, leading to the integration of these activities into BMW's long-term strategies.
- **Training Program Optimization:** Optimized the "Idea to Offer" training program, providing a group-based role-play experience for over 100 new employees, receiving high recognition from the German base.

Foreign Language Teaching and Research Press — Beijing, China
Department of International Education and Publishing
Data Analyst & UI Designer — Jun 2015 – Sep 2015

Baotou Steel Group — Baotou, Inner Mongol
Product & Project management Trainee — Jun 2012 – Sep 2012

TEACHING EXPERIENCE

Northeastern University — Boston, MA
Graduate Teaching Assistant
- OR 7310 Logistics, Warehouse and Scheduling — Fall 2021 & Fall 2023
- OR 7245 Network Analysis / Advance Optimization — Fall 2021 & Spring 2022

SELECTED PUBLICATIONS

- Jing, W., Tasci, K. R., Ergun, O., Vosti, S., Webb, P. "Enhancing Cost-Efficiency and Effectiveness in USAID's Food Aid Supply Chain Operations in Ethiopia" Informs Journal on Applied Analytics, 2025.
- Jing, W., Ergun, O. "Enhancing Effectiveness and Responsiveness of USAID's Global Food Aid Supply Chains —— a Data-Driven Optimization Framework" Manuscript submitted in 2025.

LEADERSHIP AND SERVICE

University Student Association of Art — Beijing, China
Vice President of BIT student Choir & Lead Soprano — May 2013 - Aug 2015
- Led the choir and participated in six national& international competitions and won four Golden Prizes.
- Hosted International culture-exchange concert with visiting choirs from Europe.
- Initiated and organized Anti-war 70th anniversary Concerts in Beijing National Theatre.

Innovative Experiment Center of Chemistry — Beijing, China
Project Leader — Dec 2012 - May 2013
- First interdisciplinary team, with students major in Chemistry, Physics and Economy.
- Conducted analytical experiment "Synthesis of Phosphate with Zn Substitution 1:12 Molybdenum", successfully build up a model for teaching use.
- Survived with limited budget while sending out appeals and proposals for sufficient funding for future experiments.

OTHER AWARDS

Outstanding Exchange Student Award, BIT & UPC, International Affairs Center — 2016
Dean's scholarship, BIT, Department of Art & Design and Department of Chemistry — 2014, 2013 & 2012
Multiple awards in Beijing College Student Art & Theater Festival — 2013 & 2014
Three Golden Awards at Hong Kong International Choral Music Festival — 2013

PASSION AND INTERESTS

Jazz, Films, Pilates, Language, Github (recent discovery!)