

Changhao (Chase) Sun

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Education

University College London

MSc Business Analytics, School of Management

London, UK

Sep 2025 – Sep 2026

- Key modules: Machine Learning, Natural Language Processing, Business Strategy & Analytics

The University of Electro-Communications

Master of Engineering, Operations Research, Department of Computer and Network Engineering

Tokyo, Japan

Oct 2023 – Sep 2025

- Key modules: Convex Optimization, Information Theory, Data Engineering, Data Visualization

University of Wisconsin-Madison

Bachelor of Science, Computer Science and Mathematics (Double major)

Wisconsin, USA

Sep 2016 – May 2020

- GPA: 3.63/4.0; Honors: Dean's List (Fall 2017–2018, Spring 2016–2017)
- Key modules: Stochastic Processes, Database Management, Operating Systems, Artificial Intelligence

Experience

Industry-sponsored Data Scientist | Sony Europe B.V.

Apr 2026 – Now

- Built a **constrained optimization system** in Python and Google **OR-Tools** to reconcile hierarchical demand forecasts with business guardrails, deployed on **Databricks** against real industry distribution data.
- Prototyped robust optimization with Bertsimas-Sim **Γ -budget** uncertainty sets and built an **explainability** module generating binding-constraint attribution and counterfactual rationales for non-technical demand planners.

Research Assistant | Asian Academy of Digital Economics

Mar 2025 – Jul 2025

- Built a structured database across **20+** countries using **LLM**-assisted semantic search across multilingual sources, reducing manual search from weeks to days and delivering a categorized partner pool used in strategic planning discussions.

Research Assistant | CIDEG, Tsinghua University

Mar 2024 – Sep 2024

- Consolidated economic indicators for 120+ cities from multiple sources, handling missing values and reconciling cross-source discrepancies; built automated update **pipelines** with **Python** and **Excel**, cutting recurring reporting prep from days to hours.
- Conducted **EDA** with **Power BI** and flagged year-on-year outliers for the research team, producing visual summaries that informed ranking methodology decisions for the Global Innovation Hubs Index 2024.

Software Engineer | CICV (Beijing) Research Institute Co., Ltd.

May 2019 – Aug 2019

- Developed a **ROS** data collection **GUI** adopted as team's primary tool; designed a **SQL** storage schema for a 100,000+ row scene database and tested multiple recognition approaches to support downstream ML training.

Selected Projects

OrderThis – Generative AI Startup Project

Jan 2026 – Now

- Independently built a **Streamlit** MVP, designing **multi-task prompts** for OCR, contextual translation, and allergen inference, with a **RAG** pipeline using **Gemini API** embeddings for multimodal menu understanding.
- Orchestrated a multi-agent development workflow with **Claude Code** for architectural planning and **Codex** for code review, authoring a custom Claude Code **skill** for autonomous milestone logging.

Suggestion Mining from High-Star Hotel Reviews

Jan 2026 – Apr 2026

- Built an end-to-end **NLP** pipeline for detecting actionable suggestions in hotel reviews, fine-tuned **DistilBERT** with threshold optimization, improving PR-AUC by 5.2% and F1 by 9.2% over frozen baselines on 10,000+ hotel reviews.
- Applied **BERTopic** clustering to 4,000+ predicted suggestions, identifying 56 actionable topics across service categories and translating unstructured text into prioritized recommendations as guidance for hotel management.

Semantle Helper – Online Learning for Semantic Word Search

Sep 2025 – Mar 2026

- Designed an online learning system that locates a target word in under 20 queries from a **3M-candidate vocabulary**, using an online **Ridge regression** learner in **word2vec/GloVe** 300-dim embedding space.
- Tuned the learner's stability through adaptive regularization and weighted **ensemble** with centroid estimates, shipping three usage modes with a **pytest** test suite covering the core update logic.

Additional Information

- **Natural languages:** Chinese (Native), English (Proficient), Japanese (Proficient, JLPT N1)
- **Programming languages:** Python, R, Java, C, SQL
- **Technical:** PyTorch, scikit-learn, HuggingFace Transformers, Claude Code, Codex, Docker, Databricks, Tableau, Power BI