

Jacob Waldo

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EDUCATION

University of Southern California **GPA: 3.97/4.0** **Los Angeles, CA**
Bachelor of Science in Economics and Data Science, Minor in Mathematics Aug 2024 – Dec 2026

- Transferred from Chapman University (B.S. Computer Science & B.A. Economics, **GPA: 4.0/4.0**)
- Relevant Coursework: Probability Theory, Linear Algebra, Econometrics, Introduction to Risk Management and Financial Derivatives (UC Berkeley Extension, 2025), Multivariable Calculus

PROFESSIONAL EXPERIENCE

Summer Market Risk Analyst — Goldman Sachs (Incoming) Incoming, Summer 2026

- Will join the Market Risk Division in Dallas for Summer 2026

Supplemental Instruction Leader, USC Dornsife Next Generation Science Programs Aug 2025 – Present

- Deliver 3 weekly lectures for approximately 100 undergraduates in ECON 317 (Statistics for Economists), create notes, problem sets, and lead exam reviews to reinforce statistical concepts
- Serve as 1 of only 2 Supplemental Instruction Leaders in USC's economics department, supporting academic success for 1,000+ undergraduate students

Undergraduate Research Assistant — Dr. James Alcala, USC Jun 2025 – Jan 2026

- Investigate inherent bias in large language models like OpenAI's GPT-5, GPT-5 Nano, Ollama, and Gemini by analyzing how viewpoint, sentiment, and context shift across models and prompts
- Implement a LangGraph-powered summarization pipeline, cutting down manual review of 40+-page research documents from ~1 hour to under 5 minutes
- Incorporate attention-inspired message passing so chunk-level summaries refine each other, combining MapReduce efficiency with iterative refinement to achieve 2 to 3× faster processing while improving long-document summaries

Manager on Duty, Palo Alto Swim and Sport Jun 2024 – Aug 2024

- Directed operations management for a rotating team of ~15–20 daily lifeguard and front-desk staff, coordinating scheduling, workflows, and safety standards to support ~150–500 daily patrons
- Oversaw summer camps and swim lessons, including ~30 daily staff members

CERTIFICATIONS

Passed FRM® Part I Exam, Global Association of Risk Professionals (GARP) Aug 2025

- Scored in top quartile (76th–100th percentile) across all four domains: Foundations of Risk Management, Quantitative Analysis, Financial Markets & Products, and Valuation & Risk Models

TECHNICAL PROJECTS

College Federal Reserve Challenge — Team Analyst Sep 2025 – Oct 2025

- Represent USC as part of a 5-member team in national Fed Challenge, a competitive monetary policy and financial markets case competition judged by Federal Reserve economists
- Analyze macroeconomic indicators and Bloomberg Terminal futures/option chain data to develop and present policy recommendations based on current market conditions

Determinants of Early-Exercise Premium (EEP) for American Puts Apr 2025 – Jul 2025

- Led 2-person research team analyzing drivers of option pricing
- Automated calculation of latent early-exercise premium (EEP) for American SPY put options using Bloomberg Terminal data, incorporating put–call parity and transaction cost adjustments for financial derivatives
- Accelerated computation by 26× through GPU-powered processing (CuPy), reducing runtime from 5.62s (CPU/NumPy) to 0.21s (GPU/CuPy) on 25M+ rows of option pricing data
- Built a Monte Carlo simulation with 1,000 antithetic variate pairs (approximately 486k simulated points) to recover unobservable EEP
- Identified time-to-maturity and implied volatility as primary drivers of early exercise premium (both with >99.99% statistical confidence), demonstrating premium's rapid decay near expiration but growth in volatile markets

TECHNICAL SKILLS

- **Programming & Tools:** Python (NumPy, Pandas, Matplotlib), SQL, Stata, Excel, Java, C++
- **Quantitative Finance & Risk:** Monte Carlo Simulation, Derivatives Valuation, Fixed Income Analytics, Financial Modeling