KAILEY SIMONS

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EDUCATION

Massachusetts Institute of Technology **Cambridge, MA**

Master of Engineering in Computer Science, Data Science, Economics **May 2027**

Bachelor of Science in Computer Science, Data Science, Economics, and Business Analytics **May 2026**

Relevant Coursework: Machine Learning (Fall 2025), Real Analysis, Probability & Random Variables, Optimization in Business Analytics, Fundamentals of Statistics, Analytics for a Better World

SKILLS & ACTIVITIES

Languages: Python, Java, JavaScript, R, Julia, HTML/CSS, SQL, Typescript
Technologies: AWS (Lambda, Bedrock), Git, PostgreSQL, NumPy, Pandas, TensorFlow, PyTorch, scikit-learn
Core Expertise: Predictive Modeling, Machine Learning, Statistical Analysis, Data Pipeline Engineering, Agile
Fluent Languages: English, Spanish
Activities: MIT Varsity Swimming and Diving (All-American)

TECHNICAL EXPERIENCE

Vanguard **May 2025-Present**

Investment Systems Intern **Malvern, PA**

- Pioneered AI-powered analytics in the Portfolio Review Department by designing a real-time analytics pipeline using AWS Lambda and Bedrock, improving analyst decision-making speed by 20%
- Developed a volatility nowcasting model using scikit-learn, ARCH, and matplotlib to increase execution strategy speed and accuracy
- Collaborated with engineers, data scientists, and leadership to solve complex technical problems under rapid iteration cycles
- Documented solutions and presented findings to senior management for strategic integration into business operations

Lendica **January 2025**

AI Engineer **Boston, MA**

- Engineered a scalable backend fraud detection system, reducing manual small and medium-sized business (SMB) loan review time by 50%
- Partnered with financial analysts to align technical solutions with business priorities
- Designed modular systems enabling rapid deployment and continuous iteration of AI models

MIT Center for Collective Intelligence **May 2024-June 2025**

Undergraduate Researcher **Cambridge, MA**

- Optimized, fine-tuned, and iteratively tested LLM prompts across GPT-4 and GPT-3.5 models, improving feedback alignment accuracy by 10% in behavioral experiments
- Conducted experiments on human-AI interactions, informing ethical AI design and governance practices
- Applied statistical modeling to evaluate experimental outcomes and provide actionable insights for multidisciplinary teams

LEADERSHIP EXPERIENCE

MIT Undergraduate Economics Association **September 2024-Present**

Co-President (2025-2026)/Publicity Chair (2024-2025) **Cambridge, MA**

- Directed engagement strategy for 100+ students, prioritizing initiatives based on community feedback and organizational goals
- Contributed to weekly executive meetings to plan events and drive improvements in the MIT undergraduate economics program

MIT Baker House Executive Team **February 2024-Present**

Sustainability Co-Chair **Cambridge, MA**

- Coordinated, led, and executed a series of 3 sustainability events and study breaks throughout the year
- Engaged in weekly executive board meetings to address and resolve facility issues in Baker House, aiming to enhance the residential experience for undergraduate students

MIT Undergraduate Association Sustainability Committee **September 2023-Present**

Co-President (2025-2026)/Publicity Lead (2023-2025) **Cambridge, MA**

- Led, coordinated, and hosted events with 5+ sustainability organizations from other schools
- Engaged in biweekly executive board meetings to discuss ways to promote sustainability at MIT
- Managed stakeholder communications and facilitated discussions to resolve challenges and drive outcomes