Dylan Bago

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Education

Texas A&M University, *B.S. Industrial Engineering; Statistics & Mathematics Minors* May 2029

- Brown Foundation Scholar: full-ride merit scholarship awarded to top **0.01%** STEM admits; **SAT: 1580**, **ACT: 36**

Relevant Experience

Square Kettle LLC, *Discretionary Trader Intern* September 2026–Present

- Selected for a 12-week paid trading program with a structured **$50K capital allocation** across futures, options, and leveraged equities, including direct mentorship and weekly strategy and risk reviews
- Researched catalyst-driven setups and maintained IBKR trade logs, defining the mispriced variable, catalyst, counter-thesis, assumptions, instrument, position size, and thesis-based exit before execution

Sinn Fund, *Quantitative Analyst* August 2026–Present

- Conducted quantitative research for a **$6M AUM student-managed hedge fund** and developed Python workflows to evaluate signals, factor exposures, and portfolio risk across long/short equity and directional macro strategies
- Translated investment hypotheses into reproducible backtests, scenario analyses, and risk cases; presented assumptions, expected edge, sizing, drawdown, and invalidation criteria before capital allocation

TAMU DIVE Lab, *Machine Learning Researcher* August 2026–Present

- Investigated **self-conditioning in diffusion language models**, examining hidden-state versus vocabulary-space representations and their implications for denoising convergence, output-projection cost, and memory overhead
- Explored combining **continuous latent refinement with self-speculative decoding** to increase accepted tokens per full model pass; assessed tradeoffs among generation quality, refinement steps, and inference efficiency

AggieQuant, *Founder & President* January 2026–Present

- Founded and lead Texas A&M's quantitative finance organization; built two technical tracks, project pods, workshops, and trading simulations across equities, options, and prediction markets
- Secured **seven confirmed sponsorships**, including **Jane Street, HRT, Citadel Securities, and Quadrature**; lead firm programming, technical events, recruiting, and industry partnerships

TAMU Operations Research Department, *Research Intern* August 2025–Present

- Developed Gaussian Process surrogates and posterior simulations to quantify uncertainty around noisy multi-objective Pareto fronts; ran **100+ Monte Carlo trials** across kernels and noise regimes
- Formulated a **PuLP/CBC MILP** that produced minimum-area contiguous confidence bands targeting **95% posterior coverage** and supported an academic manuscript in preparation

Awards & Competitions

Harvard Undergraduate Trading Competition, *Quantitative Trading Competitor* March 2026

- Placed **1st of 48 teams** in Jump Trading's live prediction market, dynamically pricing 8 derivative contracts across 4 real-time races while updating probabilities and managing event risk
- Competed in Optiver and HRT cases on options market-making, dynamic hedging, and game-theoretic allocation

IMC Prosperity 4, *Algorithmic Trading Competitor* April 2026

- Placed **#193 overall** globally and **#54 in America**; built strategies across simulated market-making, pricing, allocation, and opponent-dependent manual trading rounds

Projects

RL Market Making & Adverse Selection, *Independent Researcher* September 2026–Present

- Designed a **12-regime market-making POMDP** to study how RL agents distinguish informed flow from ordinary demand using quote-dependent executions, no-trade observations, and inventory exposure
- Specified an **exact Bayesian benchmark** and recurrent PPO policies to examine fair-value updatesand quoting decisions under adverse selection, balancing expected trading profit against inventory risk
- Designed **mechanistic interpretability** experiments with hidden-state probes and causal interventionsto test belief use in quoting, with baseline comparisons and stress tests under changing order flow

Skills & Interests

Languages: Python, Java, C++, SQL, R
Tools: PyTorch, TensorFlow, Pandas, scikit-learn, PuLP, Git, Bloomberg Terminal
Interests: Stochastic Optimization, Machine Learning, Market Microstructure, Prediction Markets