LUCAS MARQUES SNELLER

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EDUCATION

Miami University Oxford, OH
Bachelor of Science in Political Science and Philosophy Expected May 2026

- Dual Major with an Economics Minor
- Awards: HASS Scholar, Prodesse Scholar

RELEVANT EXPERIENCE

HASS Undergraduate Research Program Oxford,OH
Undergraduate Researcher 2022-Present

- Utilize transferable skills and conduct extensive undergraduate research and presented research at symposium regarding DEI programs and availability in predominantly white institutions

Miami University Oxford,OH
Research Assistant 2025-Present

- Collaborate with faculty across Economics, Political Science, and Computer Science to support multiple concurrent research initiatives, translating research questions into reproducible data/analysis workflows, maintaining clear documentation, and delivering polished research outputs (projects detailed below).

Owens Corning Financial Case Study Competition Winner ,Oxford, OH
Spring 2023

- Awarded first place for study of international markets and provided the best new revenue sources

PROJECTS

- **LLM SOC Classification (Research Assistant):** Built an LLM-driven SOC-2018 classifier using Retrieval Augmented Generation (RAG), hybrid dense+sparse retrieval, Prediction Powered Inference (PPI), and exemplar prompting; designed a calibrated decision layer and prediction-powered inference with audit tooling.
- **Asian American History Project (Research Assistant):** Supported an initiative to document and digitize Asian and Asian American history in Ohio; ran OCR on scanned archives, built embeddings/vector indexes, and prototyped a multilingual RAG+LLM Q&A platform for researchers and community partners.
- **Economic Impact of Butler County Parks (Research Assistant):** Collaborated with faculty and local partners on a parcel-level GIS and hedonic pricing model; linked park proximity to housing sale prices, property tax uplift, and a tract-level Park Access Index tied to health outcomes, civic indicators, and quantitative estimates of parks' contributions to community well-being.
- **Double Machine Learning for Dynamic Panels:** Developed a DML inference framework for high-dimensional time series using Neyman-orthogonal partialling-out scores, blocked-time cross-fitting with buffering, and unit-clustered variance estimation; established asymptotic normality under weak dependence and validated improved bias reduction through Monte Carlo stress-testing
- **Intermediary Asset Pricing & Sentiment:** Developed an endogenous two-state Markov Regime Switching model to identify intermediary constraints from aggregate returns; demonstrated that negative sentiment shocks in constrained regimes trigger liquidity-driven crashes and predictable reversals in high-inventory-risk stocks, quantifying a $384 billion wealth transfer from forced sellers.
- **Mean Field Game Dynamics:** Formulated a dynamic MFG framework coupling endogenous price formation with overconfident Bayesian filtering; derived a closed-form linear feedback policy under Gaussian increments and utilized particle-based simulations to demonstrate that miscalibrated beliefs amplify trading intensity and cross-sectional disagreement.

SKILLS

- **Analytical Skills** - Applied econometric and statistical modeling (GIS hedonic pricing, dynamic-panel DML, Markov regime switching, MFG simulation) to analyze complex datasets, isolate root drivers, and design validated, performance-improving solutions supported by robustness and Monte Carlo testing.
- **Writing and Verbal Communication** - Authored technical reports, model documentation, and executive-ready slide decks; delivered research presentations at symposiums and competitions; and facilitated cross-functional meetings to translate quantitative findings into clear narratives and next-step decisions.
- **Technical Expertise** - Proficient in Excel/Word/PowerPoint and quantitative stacks (Python/R; MATLAB/STATA familiarity); built reproducible data pipelines, vector-search/RAG prototypes, and econometric simulation tooling, with strong versioning practices and rapid onboarding to new technologies.
- **Language** - Classroom Spanish and family exposure to Brazilian Portuguese; supported multilingual archival OCR/embedding workflows for research and community partners.
- **Interests** - Economics and econometrics, applied mathematics and dynamical systems, stochastic control/mean field games, AI/LLM development for research automation, mathematical modeling, statistical inference, and decision theory.

ON CAMPUS INVOLVEMENT

MiamiU Economics Club Oxford, OH
Group Member