# Till Raphael Saenger
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## Education

**PRINCETON UNIVERSITY**
**PhD (MA awarded Sept. 2023) Operations Research and Financial Engineering (ORFE)**
Princeton, USA
Sept. 2021 – Present
Advisors: Brandon Stewart (Sociology) & Ronnie Sircar (ORFE)
• Research focus: Causal inference with text and controllable generation
• Data-Driven Social Science Fellow (2023-2025)
• Teaching Assistant experience:
    - ORF499 Senior Thesis (Spring 2025)
    - ORF498 Senior Independent Research Foundations (Fall 2024)
    - ORF405 Regression and Applied Time Series (Fall of 2022 and 2023)
    - ORF350 Analysis of Big Data (Spring 2023)
    - ORF245 Fundamentals of Statistics (Spring 2024)

**UNIVERSITY OF CAMBRIDGE**
**MPhil Economics – Distinction** (Highest possible merit, 75 Avg.)
Cambridge, UK
Sept. 2019 – Aug. 2020
Thesis: ***Exploring Cyclical Predictability of Sector-Specific Equity Premia*** (80, ranked 2nd)
• St Catharine's College Distinction Prize

**UNIVERSITY OF EDINBURGH**
**MA Joint Honours Economics & Mathematics – First-Class** (Highest possible merit, 82 Avg.)
Edinburgh, UK
Sept. 2015 – June 2019
Thesis: ***On the Limitations of Cryptocurrencies*** (82, ranked 2nd)
• School of Economics Prize – awarded for top three dissertations
• Lanfine Bursary – awarded for top second-year economics grade among over 250 students
• Excellence Award – awarded for top first-year finance grade among over 150 students

## Research

**STATe-of-Thoughts: Structured Action Templates for Tree-of-Thoughts**
Zachary Bamberger\*, **Till R. Saenger**\*, Gilad Morad, Ofra Amir, Brandon M. Stewart, Amir Feder
*Preprint: [https://arxiv.org/abs/2602.14265](https://arxiv.org/abs/2602.14265)*

**The Power of Vague Conspiracy Theories: Why Expansive Voter Fraud Theories Spread,
Are Difficult to Refute, and Create Cycles of Distrust.**
Justin Grimmer, Joseph S. Mernyk, Kasey Rhee, **Till R. Saenger,** and Brandon M. Stewart
*Working paper, available upon request*

**Provocations for Human-AI Interaction: A Community Forum Case Study**
Siya Verma, **Till R. Saenger**, Théophile Pénigaud, Alice Siu, Andreas Katsanevas, Manon Revel
*Under review (Presented at APSA 2025)*

**AutoPersuade: A Framework for Evaluating and Explaining Persuasive Arguments**
**Till R. Saenger**, Musashi Hinck, Justin Grimmer, and Brandon M. Stewart
*EMNLP 2024, Main Conference*

**Estimating the Collapse of Afghanistan's Economy Using Nightlights Data**
**Till R. Saenger**, Ethan B. Kapstein and Ronnie Sircar
*PLOS ONE 19(12)*

**Exploring Cyclical Predictability of Sector-Specific Equity Premia**
Under supervision of Mark Salmon
*Master's Thesis*

**On the Limitations of Cryptocurrencies**
Under supervision of Andrew Clausen
*Undergraduate Thesis*

## Software

**STATe-of-Thoughts: Structured Action Templates for Tree-of-Thoughts**
*https://github.com/zbambergerNLP/state-of-thoughts/*
*(equal contribution)*

**SUN-Topic Model** (part of the AutoPersuade workflow)
*https://github.com/TillRS/suntopicmodel/*

## Experience

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| **META** | Menlo Park, USA |
| **Research Scientist Intern, Graph Science and Statistics Research** | May – Aug. 2025 |

• Explored content understanding of multimodal large language models
• Developed engagement predictions for user content

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| **BALYASNY ASSET MANAGEMENT** | New York City, USA |
| **Summer Associate – Quantitative Researcher** | June – Aug. 2024 |

• Derived tradable signals from ~500k unstructured text documents on US equities
• Explored signal dynamics and performance as well as signal synthesis with complementary data

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| **THE BOSTON CONSULTING GROUP** | Frankfurt, Germany |
| **Associate Consultant** | Sept. 2020 – Aug. 2021 |

• Developed a strategic risk model review for a major German bank
• Developed and published foundational report on the economic relevance of biodiversity

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| **UNIVERSITY OF EDINBURGH** | Edinburgh, UK |
| **Research Assistant of Professor Ludo Visschers** | June – Aug. 2017 |

• Reviewed literature on auction theory and efficient procurement practices
• Analysed current procurement practices of NHS Scotland

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| **GERMAN CENTRAL BANK** | Frankfurt, Germany |
| **Statistics Department – Summer Analyst** | June – July 2016 |

• Examined and evaluated data on exchange rate policies of IMF members
• Digitalised and structured data for publication

## Skills

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| **Technical:** | • Python experience in Machine Learning (PyTorch, TensorFlow, Scikit-Learn) |
| | Natural Language Processing (Hugging Face models, vLLM, APIs) |
| | Prompt Optimization (DSPy) |
| | • R experience in time series & panel data analysis and backtesting |
| | • Linux Command Line and HPC proficiency (including SLURM); Git; LaTeX; basic SQL |
| **Languages:** | • Fluent in English and German; Advanced Latin; Basic Mandarin |

## Additional Fellowships, Grants, and Awards

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| **PRINCETON UNIVERSITY** | Sept. 2021 – Present |

• First Year Fellowship in Natural Sciences and Engineering ($93k)
• New Ideas in Social Sciences Grant ($50k, with Brandon Stewart)
• Data-Driven Social Science Fellowship (Spring 2023 – Fall 2025; $6k)
• Graduate Student Research Grant for Mobilizing Development Finance in Fragile States ($5.7k)
• ORFE & School of Engineering and Applied Sciences Travel Funding ($1.6k)

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| **GERMAN ACADEMIC SCHOLARSHIP FOUNDATION** | Oct. 2019 – July 2020 |

• Academic excellence scholarship awarded from Germany's oldest scholarship foundation ($15k)

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| **SCHONFELD STRATEGIC ADVISORS** | April 2024 |

• Achieved 3rd place at the Early Engagement (SEE) PhD Datathon