MAKSIM SILCHENKO

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EXPERIENCE

Orbuc Research, London, UK **[Catalyst Agent Prototype]** Feb 2026 - Apr 2026
Quantitative Researcher Intern

- Developed a time-series anomaly-detection model that classifies latent states with Hidden Markov Models to flag unstable, low-predictability conditions, validated across 5 out-of-sample windows where it held up in 4 of 5.
- Built an LLM agent that automatically classifies events from live news streams, using retrieval-augmented generation (RAG) to ground each call, a probabilistic layer to aggregate outputs into a single risk score, and SQL (SQLite) storage to persist every event and classification.
- Engineered the statistical analysis behind the firm's March 2026 research report, characterising 9 historical anomaly periods and identifying 4 statistically significant shifts in correlation structure.

The TCM Group, London, UK **[Website + LLM Prototype] [GitHub]** Jan 2026 - Apr 2026
Data & Analytics Consultant Intern (Bayes Business School Capstone) · Top of the Cohort

- Designed a causal-inference framework (RCT-style wait-list control, paired hypothesis tests) to measure leadership-training outcomes, presented it to TCM's senior leadership, and saw it adopted as the standard for ongoing programme evaluation.
- Replaced multiple-choice surveys that correlated poorly with on-the-job behaviour by engineering a serverless LLM scoring engine (TypeScript, Vercel, OpenAI) that evaluates open-ended scenarios 0 to 10, validated against human raters at 0.90 rank correlation.
- Built the hypothesis-testing methodology for evaluation: a decision rule that picks the correct paired test by sample size and distribution (Wilcoxon signed-rank, paired t-test etc.), reports effect sizes with CIs, and tests against a meaningful-change threshold rather than zero.

Oxford Comma Advisory, London, UK Oct 2025 - Jan 2026
Data Analyst Intern

- Cut university-shortlisting time from 2 hours to 3 minutes per student by achieving a 73% consultant approval rate on top-5 recommendations through a two-tower neural network trained on sparse implicit feedback with confidence-weighted negative sampling.
- Found organic leads convert about 60% faster than paid channels and that early consultations carry a 2.3x hazard ratio, using Kaplan-Meier curves and a Cox proportional-hazards model on 800+ inquiries (non-converters right-censored).
- Raised booking rates from 18% to 27% by training an XGBoost model (0.79 AUC) to predict which leads were most likely to book, then A/B-testing tailored follow-ups against the standard processoutreach.

AWARDS & ACHIEVEMENTS

- **Russian National Mathematics Olympiad (MIPT): Winner**, top 0.015% nationally.
- **Jane Street 'Puzzle' Competition: Winner** (Feb 2026). **Bloomberg Trading Challenge: Captain**, +32% return vs Bloomberg WLS index.
- **Top of the Cohort**: 'Quantitative Methods & Analytics', 'AI & Big Data', 'Capstone Project' (Bayes Business School); 'M&A'(ESADE).
- **Full Scholarships**: NUS Exchange (Jan - Jun 2025), ESADE Exchange (Aug - Dec 2024);
- **Fully-funded scholarship for Agentic AI Bootcamp** by the Beijing University of Posts & Telecommunications (Jun - Jul 2026).
- **Extracurricular Coursework**: Stanford CS229 (Machine Learning), CS230 (Deep Learning), EE178 (Probabilistic Systems); MIT RES.6-012 (Probability); Imperial Mathematics for ML; IBM Applied Data Science Specialization; Statistical Rethinking 2026 (R. McElreath)

EDUCATION

National University of Singapore (NUS), Singapore Jul 2026 - 2027 (Expected)
MSc in NUS School of Computing (Business Analytics), Specialised in Statistics

Bayes Business School (City, University of London), UK Sep 2022 - Jun 2026
BSc International Business (Hons), Specialised in AI and Quantitative Methods; First-Class Honours (Highest Distinction)

UCL Economics & Mathematics Foundation Programme, UK Sep 2021 - Jun 2022
Final grade A · Mathematics 87%, Highest Grade in the stream*

RELEVANT PROJECTS

Olist Brazilian Marketplace: Causal Inference & Bayesian Modelling (Independent Project) **[Project Page] [GitHub]** 2026

- Reframed a flat marketplace A/B test as a causal-identification problem on a 97k-order panel, using a hierarchical Bayesian difference-in-differences in PyMC that corrected the policy effect from a naive −2pp to a DiD-identified +1.5pp.
- Built the full analytics pipeline behind it (DuckDB medallion SQL, a NetworkX causal DAG, three Bayesian models, falsification tests) and translated the posterior into a costed −R$452K net envelope, turning an apparent per-customer win into a no-launch call.

BCG X PowerCo: Energy Utility Churn & Survival Analysis (Applied Project) **[Project Page] [GitHub]** 2025

- Built a SMOTE-balanced Random Forest on 14,606 SME utility customers, tuning the decision threshold against a GBP cost matrix to cut expected misclassification cost by ~£15.9M on a sealed test fold.
- Added a Random Survival Forest for time-to-churn (held-out concordance 0.71, vs 0.56 for the Cox model it replaced), validated it on a temporal holdout, and shipped the pipeline as a typed Python library with a 48-test CI suite.

A/B-Test Experimentation Guardrail: SRM Detection & Causal Inference (Independent Project) **[Project Page] [GitHub]** 2026

- Built a command-line A/B-test guardrail that checks whether an experiment is safe to interpret, using a chi-square Sample Ratio Mismatch test that flagged a compromised 61/39 allocation a standard metric t-test runs straight past.
- Separated genuine treatment effects from confounding with propensity score matching and Rosenbaum sensitivity bounds to return a clear launch verdict; validated on a 300k-row stratified sample of Criteo's real 13.98M-row Uplift experiment.

SKILLS

Programming & DBs: Python (NumPy, Pandas, scikit-learn, TensorFlow, PyTorch, statsmodels, SciPy, XGBoost, PyMC), SQL, DuckDB, R, C++.
Machine Learning & AI: Supervised & Unsupervised Learning, Gradient Boosting, Neural Networks (CNNs, RNNs, LSTMs, Transformers, Two-Tower), Reinforcement Learning (Q-learning, PPO, Actor-Critic), Recommendation Systems & Embeddings, LLMs, Prompt Engineering, Agentic AI (LangChain, LlamaIndex, tool-use).
Statistical Methods: Causal Inference, A/B Testing & Experimentation, Hypothesis Testing, Survival Analysis (Cox PH, Random Survival Forest, Kaplan-Meier), Bayesian Statistics, Time-Series Analysis, Probability Calibration, Randomised Controlled Trials.
Visualisation, Cloud & MLOps: Tableau, Power BI, matplotlib, seaborn, Plotly; Google Cloud Platform, AWS, Docker; MLOps (CI/CD, GitHub Actions, model deployment, feature pipelines); Git, Jupyter, LaTeX.
Spoken Languages: English (Fluent), Russian (Native), Ukrainian (Native), Belarusian (Fluent), Spanish (Professional Working).