SME AI PROGRAM 2025

REPORT

AI-Based Forecasting for Business Impact

Supporting Zurich SMEs in operational efficiency and decision-making.

Canton of Zurich
Department for Economic Affairs
Office for Economy

Swiss Data Science Center

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Project Information

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Timeline

- September 2025 - March 2026: Roundtable collaboration towards AI prototype development
- April - May 2026: Transitioning AI prototypes to pilot projects

Executive Summary

Two Zurich SMEs, Bachmann Krawatten AG, a family-owned corporate fashion company, and GoNina, an AI startup serving more than 50 bakery locations across Switzerland, joined the Canton of Zurich SME AI Program to tackle two concrete operational problems:

- identifying which customers are most likely to reorder soon, and
- forecasting bakery demand accurately enough to cut food waste.

Both companies worked through a structured prototyping phase together, each advancing on its own challenge while learning from the other's experience.

Bachmann Krawatten: produced a working model that ranks its customers by reorder likelihood, giving the sales team a prioritised weekly contact list for the first time and allowing them to focus outreach on the 20 to 50 highest-probability contacts each week.

GoNina: identified concrete improvements to its production forecasting system through expert code reviews and structured analysis, which it is integrating throughout 2026.

GoNina's model updates, developed from improvements identified during the program, reduced forecast errors during holiday periods to approximately one third of their previous level, and cut Sunday forecasting errors by up to 50% for high-volume products. GoNina received no holiday-related customer complaints in June 2026, following the updates.

"The most important insight was that successful AI deployment does not primarily depend on the technology. It depends on clearly defined goals, a solid data foundation, and involving the right people."

— Peter Bachmann, Bachmann Krawatten AG (translated using AI)

The central lesson from both projects: the technology matters less than the foundation. Clear business goals, clean data, and a commitment to continuous improvement consistently matter more than algorithmic sophistication.

The results of the prototyping workshop are open-source and can be found here:
https://github.com/SwissDataScienceCenter/sme-kt-zh-collaboration-forecasting

Business Challenges

Bachmann Krawatten AG

> *How can a small sales team identify which customers are most likely to place an order in the coming weeks, allowing them to focus their limited time on the highest-value opportunities?*

Bachmann Krawatten AG, headquartered in Zurich and family-owned since 1955, develops and supplies corporate fashion and workwear to companies and organisations across Switzerland. The business has more than 500 active customer accounts.

The sales team's challenge was straightforward but persistent: more customers to manage than time to reach all of them. Decisions about who to contact and when were based on experience and intuition. Some customers reordered on predictable cycles; others placed orders in bursts with no clear pattern. Without a systematic way to distinguish them, time and effort were not always directed where they would have the greatest impact.

Business Impact Sought

A data-driven way to rank all 500+ accounts by their probability of placing an order in the coming weeks – so the sales team can focus outreach on the 20 to 50 highest-value contacts each week, rather than relying on memory and habit.

GoNina

> *How can bakeries produce the right amount of products every day to reduce food waste while avoiding stockouts and lost revenue?*

GoNina is a Zurich-based AI startup whose product is a demand forecasting tool for bakeries and food service businesses. The system is used at more than 50 locations across Switzerland and predicts daily product-level demand by combining sales history with external signals such as weather, school holidays, and local patterns.

The system performs well for standard products with regular sales history. The harder problem is seasonal and promotional items e.g. "Dreikönigskuchen" or "Osterchüechli" where historical data is sparse, absent, or unreliable. Too much production means waste; too little means lost sales. Across dozens of locations and hundreds of SKUs (Stock Keeping Units), getting these edge cases right has a direct and measurable impact on profitability.

Business Impact Sought

Improved forecast accuracy for seasonal and promotional products with limited or irregular history, and better modelling of how a new product affects demand for the items already on the shelf – reducing waste and stockouts simultaneously.

Approach

Why forecasting and why AI?

Both challenges are fundamentally timing problems. For Bachmann, the question is when a customer will be ready to buy. For GoNina, the question is how many units will sell on a given day. In both cases, an experienced person can make a reasonable estimate, but at the scale of 500+ accounts or 50+ locations, intuition cannot process all the relevant signals consistently.

Bachmann's sales records contained over 11,000 customer data points spanning years of purchase history. The patterns embedded in that data are not obvious to manual review at that volume, especially for more inexperienced sales personnel. Machine learning extracts those patterns and translates them into a ranked list the sales team can act on directly.

For GoNina, the forecasting challenge had already outgrown rule-based approaches. Their existing AI system handles standard products well. The program targeted the harder edge cases: sparse demand signals, products that appear and disappear across the season, and the cross-product effects of promotional introductions.

"Forecasting is about making better decisions today by being systematic about what the data already knows. The goal is not a perfect model. It is a better process. Where AI adds value is in the volume and the detail: it can work across datasets too large for manual review and identify relationships between variables that would otherwise go undetected."

— Anna Fournier, Swiss Data Science Center

Why work together?

The program paired Bachmann and GoNina, two companies at very different stages of AI maturity. Bachmann was at the start of its AI journey. GoNina had AI in production. That gap turned out to generate some of the most valuable learning of the collaboration.

Peter Bachmann entered the program with limited visibility into what maintaining a machine learning model actually requires day to day. Working alongside GoNina made that tangible: he saw first-hand that an AI model is not a tool you build once and leave running. The continuous work GoNina puts into its data pipelines, model monitoring, and retraining cycles shifted his expectations fundamentally. Machine learning, he found, is a nuanced discipline — not a case of adding a new feature and expecting it to always deliver the intended result.

For GoNina, the exchange worked in the other direction. Bachmann's consistent focus on linking every technical decision back to operational value — would a salesperson actually use this? — prompted a useful step back from technical complexity to reassess which improvements would have the most direct business impact.

Results

Bachmann Krawatten AG

Operational Insights

Analysis of Bachmann's customer data confirmed what the sales team had intuited but never quantified: customers fall into distinct behavioural types. Some reorder on predictable cycles and can be identified with a straightforward model. Others are burst customers whose purchasing is clustered and less predictable. Knowing which type you are dealing with changes how you prioritise your outreach and how you frame the conversation when you reach out.

Business Value

For the first time, Bachmann's sales team has a model-generated contact list, ranking customers by their estimated probability of placing an order in the coming weeks. Rather than working through hundreds of accounts from memory or habit, the team can focus their weekly calls and emails on the 20 to 50 highest-probability contacts.

The model is packaged as Python code to be more easily deployed in already existing CRM platforms or as a standalone solution. The next potential steps are to validate the model's ranked outputs against actual sales outcomes, refine it with outreach response data, additional receipt data and move toward routine use in the sales workflow.

"We plan to deepen the insights, expand the prototype step by step, and integrate additional data sources. In parallel, we want to anchor AI more firmly within the business, raising awareness among employees and identifying further areas of application. Our goal is to use AI as a supporting tool across multiple business areas, improving both efficiency and customer value."

— Peter Bachmann, Bachmann Krawatten AG (translated using AI)

Technical Findings

Four survival analysis models were compared. The Weibull AFT model, a relatively interpretable statistical approach, matched or outperformed the more complex Random Survival Forest across every metric. This reflects a consistent pattern in applied machine learning: when data is limited, complexity amplifies noise rather than extracting signal. Full model comparison results are provided in the Technical Appendix.

GoNina

Operational Insights

GoNina's existing forecasting pipeline performs well on products with regular demand history. The program focused on harder edge cases: seasonal and promotional items with sparse signals, and the effect of new product introductions on existing lines. Classical statistical approaches showed clear limitations in these scenarios. The sessions with SDSC identified Variational Autoencoders as a technically promising direction for modelling irregular demand and holiday-related anomalies.

Business Value

- **Holiday demand spikes:** Previously, forecast errors on holiday days could be up to four times higher than on normal days. With the updated model, those errors fell to approximately one third of their prior level, a significant improvement.
- **Sunday demand peaks:** Forecasts for high-volume items on Sundays, consistently the most challenging day for predictions, improved by up to 50%. For low-to-medium volume products, the improvement was 15–35%.
- **Customer signal:** GoNina received no holiday-related customer complaints in June 2026, following the model updates.

The program produced a prioritised experimentation plan: concrete ideas for improving GoNina's forecasting pipeline, ranked by expected impact and feasibility. GoNina has been working through this plan since early 2026, integrating successful improvements directly into the production system serving more than 50 locations.

"The personalized discussions and code reviews with SDSC experts helped us identify concrete ideas to improve forecasting performance, especially around sparse data, seasonality, and model behaviour. We translated these into a step-by-step experimentation plan and have been integrating successful improvements into our production system."

— Julia Siur, GoNina

Technical Findings

Classical SARIMA models captured seasonal patterns but showed limitations with sparse demand signals and frequent product disappearances across locations. Variational Autoencoders were identified as a promising next step for encoding normal demand behaviour and detecting holiday-related anomalies without requiring dense historical data for every product. Technical details are in the Appendix.

What Other Zurich SMEs Can Learn

The Basis

Successful AI projects share a common foundation. Clean, well-structured data sets the ceiling for what any model can achieve, and no algorithm compensates for poor inputs. Before building anything, define what operational success looks like in business terms and how you will measure it, as that metric should drive every technical decision. Equally important is organisational readiness: a model only creates value when someone acts on its outputs, so clarity on who uses the results and how they fit into daily work must come before the first line of code. And once a model is live, the work is not over. As conditions change, performance drifts, and sustaining value requires regular retraining, monitoring, and a process for detecting when outputs no longer reflect reality.

"The greatest value of this program is not only the AI solutions developed, but enabling other SMEs to build on these experiences and accelerate their own AI journey."

— Raphael von Thiessen, Canton of Zurich

Key Lessons

- **Start with the business problem, not the technology.** Both projects began with a clear operational question. That clarity made it possible to choose the right approach. The most effective SME AI projects are rarely the most technically ambitious. They are the ones where the link between model output and business decision is direct and unambiguous.
- **Data quality matters more than algorithms.** Cleaner data and simpler models consistently outperformed complex models on messier data. Before asking what AI can do, ask what your existing data actually tells you about how your business works.
- **AI is a journey, not a one-off project.** Building a useful AI system requires sustained attention to data quality, continuous iteration, and a willingness to refine the approach as you learn. Peter Bachmann took this lesson directly from working alongside GoNina: the prototype is not the destination, it is the beginning of a longer process.
- **Track business metrics from the start.** Define what success looks like in operational terms, fewer wasted products, more calls that convert, less time spent on manual sorting and establish a baseline to ground expectations before you begin. Without it, demonstrating value and justifying continued investment becomes much harder.

Could this work in your company?

The Bachmann prototype was built on more than 11,000 customer data points from sales records and outreach history. The full journey, from the initial demystification workshops through a focused two-week prototyping sprint to a pilot implementation phase, ran across the 12-month program. That full arc is genuinely part of the work: the education phase is not preamble, it is what makes the prototyping phase productive and the outputs usable.

The outcome for Bachmann is a working model, packaged in Python and structured for potential CRM integration. For GoNina, a structured improvement roadmap being actively implemented. Both are real, usable outputs, but they were produced with structured expert support, real operational data, and sustained commitment from the companies themselves.

The program is designed to provide that structure. The open-source prototype developed during Step 2 is publicly available on GitHub and can serve as a starting point for any Swiss SME. The process is replicable: start with a clear business question, invest in your data, measure business outcomes, and treat the first prototype as step one of a longer journey.

Technical Appendix

Survival Analysis - Customer Re-Engagement (Bachmann Krawatten AG)

The customer re-engagement challenge was framed as a survival analysis problem: modelling the time between customer purchases, with right-censoring to account for customers who have not yet reordered as of the analysis date. This is more appropriate than binary classification because it captures the probabilistic nature of reorder timing rather than forcing a yes/no prediction.

Four approaches were compared across two business-relevant metrics – Recall@k and C-index – as well as computational cost and interpretability.

Table A1: Model comparison results. Weibull AFT highlighted.

Model	Top-20 Recall	Top-50 Recall	C-index
Cox PH	45%	62%	0.69
Weibull AFT	**50%**	**64%**	**0.69**
Log-Normal AFT	50%	62%	0.69
Random Survival Forest	40%	60%	0.60

Metric Definitions

C-index (Concordance Index): Measures the model's ability to correctly rank pairs of customers by reorder likelihood. A C-index of 0.5 is equivalent to random ranking; 1.0 is perfect. The Weibull AFT achieved 0.69.

Recall@k: The percentage of actual top reorderers captured in the model's top k contacts. At k=20, the Weibull AFT achieved 50% (half of the customers who actually reordered appeared in the top-20 list); at k=50, 64%.

Finding

The Weibull AFT model provided the best balance of predictive performance and interpretability. Its outputs – estimated probability of reorder within a defined time window – translate directly into a ranked contact list without additional processing. The Random Survival Forest, despite being the most feature-rich model, performed worst across all metrics: a consistent pattern when data volume is limited relative to model complexity.

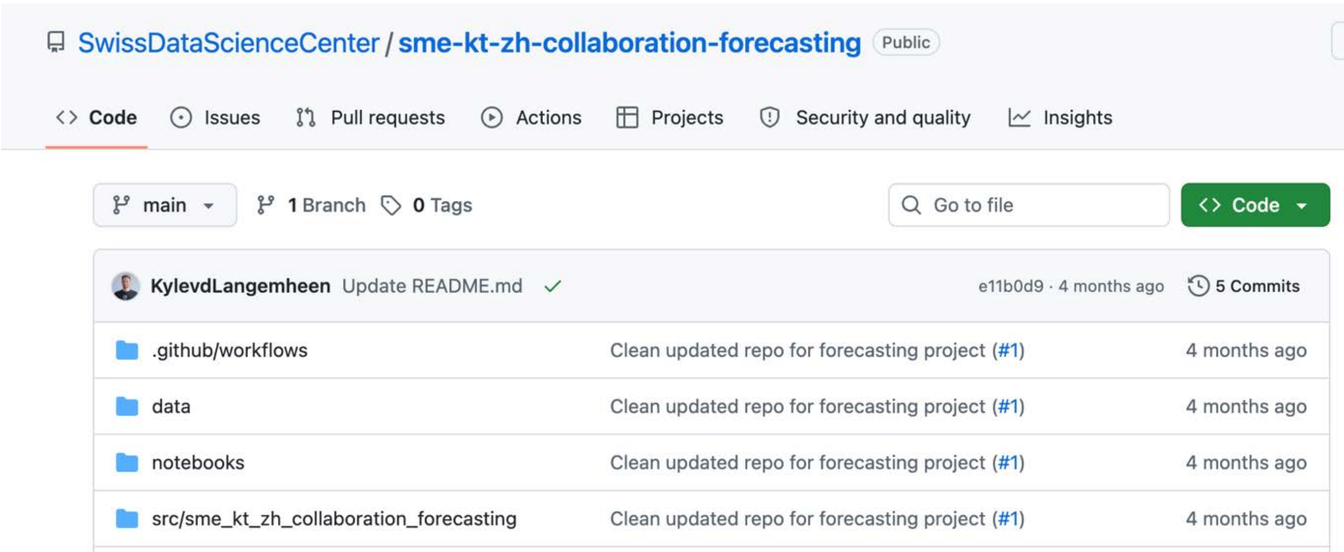
Identified Next Steps

- Incorporate outreach response data: whether a contact attempt led to a purchase, which will improve the model's signal.
- Develop a separate modelling approach for burst customers, whose purchasing is memoryless and not well-captured by standard survival models.
- Validate ranked list outputs against actual weekly sales outcomes to calibrate confidence in operational use.

Open-Source Prototype

The forecasting prototype developed during the program is open-source:
https://github.com/SwissDataScienceCenter/sme-kt-zh-collaboration-forecasting

The code includes the survival analysis pipeline for customer re-engagement modelling and is structured to be extensible. It is available at no cost to any Swiss SME as a starting point for similar applications.



Related Information & Links

SME Forecasting – Watch Video Case Study (in German):
https://www.youtube.com/watch?v=Bbt9N9EPk7k

Related Links:

Canton Zurich SME Program – SDSC

Open-source prototype on GitHub

zh.ch/location

innovation.zuerich

ahead-zh.ch

About the Division of Business and Economic Development at the Office of Economic Affairs, Canton of Zurich

We promote innovation and support businesses – from founding to networking within Zurich's key industries. Through our platform 'Innovation.Zurich', we provide guidance and information about the region as a hub for innovation. Together with the consortium Ahead, we assist local companies in pursuing their innovation projects. We also serve as a point of contact for businesses interested in establishing operations in Zurich. More information: zh.ch/location | innovation.zuerich | ahead-zh.ch

About the Swiss Data Science Center (SDSC)

The Swiss Data Science Center (SDSC) is a national research infrastructure in data science, machine learning and artificial intelligence (AI), founded by EPFL and ETH Zurich. Its mission – to enable data-driven science and innovation for societal impact – drives its initiatives in research projects, knowledge and technology transfer, and education. With a large multidisciplinary team of professionals in Lausanne, Zurich and at PSI in Villigen, the SDSC provides expertise and services to various domains, such as health and biomedical, energy and sustainability, climate and environment, digital society, and large-scale scientific infrastructures. The SDSC also contributes to initial and executive education programs at EPFL and ETH Zurich. More information: www.datascience.ch

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We thank the Zurich SMEs of the 2025 AI Innovation Program Cohort:

cisra.ch | databiomix.com | econetta.com | gonina.com

languagemasters.ch | microdul.com | papillon.ch | soort.com

stratoserv.ch | safetycenter.ch | vonlanthen.tv

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