

TONI SIIK

PRODUCTION LEADER & MANUFACTURING DATA SCIENTIST
TECHNICAL DIRECTOR · FOUNDRY & OPERATIONS

PRODUCTION LEADERSHIP + METALLURGY + DATA SCIENCE = MEASURED CHANGE

ELEV. – SUBJECT

BASED Trimbach, CH
EXPERIENCE 14+ years

CONTACT

EMAIL toni.siik@gmail.com
PHONE +41 76 573 60 92
WEB tonisiik.com
LINKEDIN in/tonisiik

LEADERSHIP

- × P&L / operations · ~100-staff scale
- × Lean Six Sigma · 5S · shopfloor mgmt
- × AS9100 / ISO 9001 · CAPEX projects
- × Supplier & cross-functional leadership

DATA & METHODS

- × Causal inference · DoE · SPC
- × Classical ML & SHAP · computer vision
- × Python · SQL · pipelines · SAP
- × MAGMASoft / Flow3D simulation

LANGUAGES

Finnish	Native
English	Native
German	Fluent
Swedish / Dutch	Moderate

SHEET 02 – PROFILE

Foundry engineer who **leads production** and turns its data into measured change. 14+ years across European casting operations (automotive, marine, aerospace) – from running a foundry as Technical Director to architecting the analytics that **root-caused a ~CHF 5M scrap defect unsolved for 5-6 years**. A rare full stack: production leadership + metallurgy + applied data science.

DETAIL A – PRODUCTION & OPERATIONS LEADERSHIP

- × **Technical Director / Head of Foundry – Wilhelm Funke (DE)**. Modernized the foundry's engineering – a simulation-first casting-design approach (Flow3D) and data-based process development; streamlined prototyping to sub-5-day 3D-printed moulds. The method lifted yield +50% and cut chills -60%, root-caused magnesium & copper-alloy defects, and qualified the shop for AS9100 aerospace work (incl. design support to Rimac).
- × **Foundry Manager – Georg Fischer JRG (CH)**. Ran plant operations; reworked all standard work; implemented 5S & shopfloor management; Kanban delivering ~30% lead-time gain on high-runners; foundry safety planning.
- × **People & programmes**. Lean Six Sigma Green Belt; AS9100 implementation lead; CAPEX / capital-project ownership; supplier & cross-functional stakeholder leadership.

DETAIL B – MANUFACTURING DATA SCIENCE & ANALYTICS

- × **Cracked a root cause that eluded 5-6 years of work**. Identified the origin of a metallurgical defect responsible for ~CHF 5M in scrap via a 5-system data programme (~2,000 charges), DoE and SEM/EDX; turned subjective inspection into a quantitative, data-driven QA gate.
- × **Production ML & computer vision**. Scrap forecasting (~90 XGBoost/RF models, 5 defect types) with SHAP-driven driver science; deep-learning grain-size measurement at $r = 0.97$ vs gold standard, deployed as the objective measurement gate.
- × **Predictive modelling & simulation – a 14-year thread**. Process simulation and predictive material-property modelling run from the MSc through Componenta and Nemak – the analytical foundation beneath the recent production data science (see Selected Work).
- × **Platforms & governance**. Production-intelligence platform over 500k+ ERP records (data cube + 10-pillar governance audit + SPC); a reproducible-analysis system enforcing byte-identical re-runs.

NOW · 2022 – PRESENT

FOUNDRY EXPERT / PRODUCTION ENGINEER · PREV. FOUNDRY MANAGER (2022-24)

Georg Fischer JRG AG · Sissach, Switzerland

Joined as **Foundry Manager** – ran plant operations, reworked standard work, 5S & Kanban (~30% lead-time gain on high-runners). Since 2024 realigned to deep analysis: a closed-loop quality programme (root-caused a ~CHF 5M scrap defect open 5-6 years) plus a plant-wide production-intelligence stack (scrap-forecasting ML, vision grain-sizing, governance & reproducibility).

2019 – 2022

TECHNICAL DIRECTOR / HEAD OF FOUNDRY

Metallgiesserei Wilhelm Funke GmbH · Alfeld (Leine), Germany

Modernized the foundry's engineering – simulation-first casting design (Flow3D) and data-based process development; streamlined prototyping to sub-5-day 3D-printed moulds (**+50% yield, -60% chills**). Root-caused magnesium & copper-alloy defects; achieved AS9100 aerospace certification; direct design support to Rimac (next-gen electric engines).

2015 – 2019

SENIOR PROJECT ENGINEER / SIMULATION SPECIALIST

Nemak Weirigerode GmbH · Germany

Rescued a critical engine-block launch months from SOP – root-caused hot tearing and solved it with process-parameter changes alone (avoided costly tooling). Analysed 10,000+ tensile bars into a predictive material-property tool; built an SQL framework to leverage process data across the chain.

2011 – 2015

PRODUCT DEVELOPMENT / LEAD DESIGN ENGINEER

Componenta · Helsinki, Finland

Supported a 300,000+ t/yr foundry network; led the most demanding large castings (10-tonne wind-turbine hubs, marine engine components incl. Wärtsilä). Cut **scrap 50%** in a six-month simulation + process-data project.

SHEET 04 – SELECTED WORK

CLOSED-LOOP QUALITY ROOT-CAUSE + MEASUREMENT GATE ~CHF 5M defect · 5-6 yr	VISION METROLOGY AUTOMATED GRAIN-SIZING $\tau = 0.97$ vs gold standard
FORECASTING ML SCRAP PREDICTION ~90 models · 5 defect types	PLATFORM PRODUCTION INTELLIGENCE 500k+ ERP records · governance + SPC
PREDICTIVE PROPS MATERIAL-PROPERTY MODEL 10,000+ tensile bars · Nemak	SIMULATION CASTING-SIM CALIBRATION -50% scrap · Componenta / MSc

SHEET 05 – EDUCATION & CERTIFICATION

MSC & BSC – METAL MATERIALS & MANUFACTURING Tampere University of Technology, Finland · 2005-2011	LSS Green Belt · 2026 QMS AS9100 lead
---	---

SHEET 06 – BEYOND WORK

× Floorball coach · junior team	× Trail running & fastpacking	× Internationally rooted – lived in FI, US, NL, DE & CH
---------------------------------	-------------------------------	---

DRAWN BY TONI SIIK	REV – / 2026	SHEET 2 / 2
-----------------------	-----------------	----------------