

Felix Schaller

Fractional DeepTech Expert — Autonomy, AI & Functional Safety

Technical Due Diligence · ISO 26262 / SOTIF · SLAM · ADAS · 15+ yrs

I help investors, family offices, consultancies and engineering teams **assess and de-risk** AI and autonomy systems through technical due diligence, certification-feasibility review (ISO 26262 / SOTIF) and failure-mode analysis. Fifteen years of model-based safety engineering across automotive, aerospace and defense, now combined with formal-semantic AI for systems that can be **trusted, validated and certified**. A twenty-year throughline runs from procedural, simulation-driven computing to perception, safety and formal-semantic reasoning.

SELECTED ENGAGEMENTS

Independent Consultant — Fractional DeepTech Expert 2025 – present · Munich

felixschaller.com felixschaller.com

Technical due diligence of AI & autonomy platforms (perception, SLAM, sensor fusion, localization); ISO 26262 / SOTIF certification- feasibility and gap analysis; AI risk & failure-mode assessment; system architecture and validation strategy. Fractional / interim for investors, consultancies and deepTech teams.

Founder & CEO

2024 – present · Dubai (DIFC)

[XIXUM Cognitive Software Ltd. xixum.org](https://xixum.org)

Building a **formal-semantic, non-probabilistic reasoning engine** for high-assurance domains — verifiable, traceable AI as a deliberate counter-design to LLM-only approaches that can't meet certification or auditability requirements. Owns core IP.

Lead Research Scientist — ADAS & Functional Safety

2017 – 2025 · Munich

[Validas AG](https://validas.ag)

Led model-based **V&V frameworks** for safety-critical automotive and aerospace software; traceability, testing and certification workflows; autonomy perception & localization validation (Camera / LiDAR) in regulated environments.

Founder & CEO

2013 – 2016 · Munich

[AF-AX — Aerodynamic Surface Technology / VTOL af-ax.com](https://af-ax.com)

Seed-stage startup developing patented, passively shape-shifting aerodynamic surface technology for drag reduction and dynamic high-lift (rotor blades, wings, hulls). Grounded in own fractal vortex-theory research.

Also (via felixschaller.com): DO-330 tool-qualification proposal (eVTOL programme) · GAMP 5 / FDA-EMA advisory & ALCOA+ data-integrity review (cloud PBPK/MIDD platform) — brief, scoped engagements.

EARLIER CAREER

Computational Graphics & Simulation Developer

2001 – 2014 · Munich / Dubai / Brisbane

The procedural, geometric and physics-simulation techniques that now underpin computer vision, SLAM, digital twins and AR. Worked hands-on since the early 2000s in node-based, visual-dataflow tooling, long before the “low-code” paradigm reached the mainstream. Procedural generation, geometric modeling, fluid / cloth & physically-based simulation; custom tools and pipelines (SideFX Houdini, Autodesk Maya, Python). The seedbed for my later work in perception, simulation-driven design and formal-semantic AI. Credits on IMDb.



CONTACT

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AVAILABILITY

Expert calls · technical due diligence
· fractional / interim — global,
remote / hybrid

CERTIFICATIONS

IREB — Certified Professional
Requirements Engineer
ISTQB — Certified Software Tester
Stanford — Machine Learning
Mechatronics Engineering

STANDARDS & FRAMEWORKS

ISO 26262 · ISO 21448 (SOTIF)
Automotive SPICE · ISO/PAS 8800
IEC 61508 (functional safety)
DO-330-aware · GAMP 5-aware

METHODS & STACK

Formal-semantic AI · NLP → formal
models
SLAM · sensor fusion · Camera/
LiDAR
Model-based V&V · EMF · Sirius ·
Xtext
Neo4j · pyEcore · Python · Java ·
AWS

LANGUAGES

German (native) · English (fluent)
French (basic)

RESEARCH & COLLABORATIVE PROJECTS

SafeWahr real-time perception monitoring & safety concept for autonomous vehicles, with Intel.

BMWK · 2021–2024

HUBCAP model-based design sandbox for cyber-physical systems.

EU · Virtual Vehicle

SELECTED PUBLICATIONS & IP

PROCEEDINGS **Semantic artifact tracing: a model-based approach for automated dependency management.** AIP Conf. Proc. 3381, 070008 (2026). doi:10.1063/5.0309135

WORKSHOP **The Role of Semantic Models in Constraining Pattern Recognition in Modern AI Systems.** IOS Press, Intelligent Environments 2025, 96–105. doi:10.3233/AISE250023

WORKSHOP **Machine-trainable software models towards a cognitive thinking AI (NLX).** Modellierung 2022 Satellite Events, GI, 90–105. doi:10.18420/modellierung2022ws-010

PREPRINT **Patterns Everywhere, Context Nowhere: Decidability and the Semantic Crisis in Autonomous Systems.** Zenodo (2026). doi:10.5281/zenodo.20562410

PREPRINT **Gödel's Incompleteness Theorem and the Power of Context.** Zenodo (2026). doi:10.5281/zenodo.20971031

BOOK **Von der Bernoulli-Anomalie zur fraktalen Wirbeltheorie.** Shaker Verlag (2012).

PATENT **Flexible wing profile.** International patent application (2011).

CORE EXPERTISE

Technical Due Diligence & Advisory	AI / autonomy platform assessment, certification-feasibility (ISO 26262 / SOTIF), architectural-risk & scalability review, failure-mode analysis — for investors, family offices & consultancies
Functional Safety & SOTIF	ISO 26262 lifecycle, ISO 21448 (SOTIF), ASPICE-aligned process, IEC 61508, safety cases, tool qualification (DO-330-aware)
Perception & Autonomy	SLAM & localization robustness, multi-sensor fusion, Camera / LiDAR perception validation, robustness & failure-mode evaluation
Formal-Semantic AI & V&V	Model-based V&V, DSLs & code generation (EMF, Sirius, Xtext), formal-semantic / deductive reasoning, NLP → ontologies & verifiable models

EDUCATION

Stanford University	Machine Learning (NanoDegree)	2016 – 2017
IHK	Mediadesigner for Audiovisual Media / Film	2002 – 2003
FH Esslingen	Mechatronics, Robotics & Automation Engineering (Vordiplom)	1999 – 2001