

# THE PARTNER NETWORK



RESEARCH PARTNERS



INDUSTRY PARTNERS



FEDERAL GOVERNMENT



GEFÖRDERT VOM



Bundesministerium  
für Bildung  
und Forschung

\* New industry partner in 2023





Software house and IT service provider for tax consultants, certified public accountants and lawyers and their mostly medium-sized clients. DATEV offers software products, cloud solutions, service and training.

### Research topics and fields of interest

- Security / Data Governance
- Digital ecosystem
- Software & Systems Engineering
- Knowledge organization and interaction
- Data Science / (Process) Automation





Railroad company and its digital partner

### Research topics and fields of interest

- Safety & IT Security in the context Digital Twin of a Rail Turntable
  - Concepts
  - Architecture
  - Implementation with a focus on functional Safety
  - IEC62443 and other regulations
- Organisational structure
  - Mapping changing structures, thematic teams, guilds of the organisational structure and workflows low-maintenance
  - How to build them in such a way that one gets overarching themes in the interaction of the aggregated units (cluster, unit, team, circle)



## Publishing and media group

- scientific publications (Springer Nature)
- educational offers (Macmillan Learning)
- trade publishers (Macmillan Publishers)
- digital companies focusing on science, education and content (Digital Science and Holtzbrinck Digital)

## Research topics and fields of interest

- Identify, assess and publish scientific preprints
- Using LLMs to identify novel ways of scientific knowledge representation
- Explore and conduct a scientific conference in VR/Metaverse
- A dynamic and interdisciplinary new content format in the applied sciences
- From smart search to true discovery: browse, explore & discover based on knowledge information graphs
- Assisted automation or automated assistance? Highly scalable content enrichment under ubiquitous budget & quality constraints.
- Identifying emerging technologies with Large Language Models
- Text generation using Graph Neural Networks or Graph Transformers
- From “Common sense” to "scientific common sense" graphs
- Disambiguation of author/inventor names in and across patents and research articles
- Categorize/map book imprints to a publisher
- Book review sentiment analysis and interest spikes
- Trending book categories, authors, and specific book
- Interactive database querying for operational analytics
- Conceiving the collaborative learning future
- AI-driven knowledge graphs
- Explore a research journal on blockchain technology
- Natural Language Processing (NLP) in educational courseware





## Information technology and telecommunication solutions

### Research topics and fields of interest

- Visibility in Cloud datacenter Networks via End hosts and in-network mechanisms
- Virtual Private Networks Verification in Cloud datacenter Networks
- Mining high-level network intents from low-level dataplane in cloud datacenter networks
- P4 Verification
- Resilient by design vehicle architectures
- Towards Automated Continuous Assurance
- Safety/Security Co-Engineering for Intelligent Systems
- Unsupervised Online Domain Adaptation for Vision Perception Safety
- NeuroSymbolic AI for Safe-Critical Systems
- Cloud Usage Control based on the side-car pattern
- Sticky policies for dataspace
- Authorization Obligations as smart contracts with zero-knowledge proofs
- Secured Wallet for Trusted Identities
- Building Trust in Autonomous Vehicles
- Protection and Provenance of Identities and Credentials in the Smart Car of the Future
- Runtime integrity
- Evolved distributed computing and edge platforms for next generation 6G communication systems
- Resilient and privacy-aware in-network computing: enabling algorithm and system
- Design and applications of dynamic cV2X (IoT) network system in 6G
- Quantifying effectiveness of AI in NFs decision-making
- Online Learning impacts on Mobile Network Stability
- Decentralized Core for Service Robots with Ambient Intelligence
- In-Network Computing for Multi-Player AR Gaming
- Multimodality services in mobile network with embedded AI/ML
- Intelligent and collaborative 6G network architecture
- Run-time efficient resource provisioning
- Link-level performance evaluation for smartphone connectivity with LEO satellites



Healthcare, Life Science and Electronics: At Merck we want to become the global 21st century science and technology company. To meet our ambitious goal, we need curious minds from all IT domains. You are welcome to ask the Software Campus team to contact us and explore cooperation possibilities.

### Research topics and fields of interest

- Data Science (for a huge variety of AI data use cases)
- Data Engineering
- IoT (Industry 4.0)
- Smart Devices Ecosystem
- Core IT (ERP, Collaboration)
- Quantum Computing





**SHS** - STAHL-HOLDING-SAAR

Management Holding of the steel producing companies Saarstahl and Dillinger

### **Research topics and fields of interest**

- Synthetisierung von Trainingsbilder für Deep Learning basierte Qualitätsprüfungen
- Quantenalgorithmen für Produktionslogistik der saarländischen Stahlindustrie
- Demokratisierung von AI Planning Methoden



software  
campus



Software solutions in the area of Business Process Excellence

### Research topics and fields of interest

- Scalable machine-learning based data preparation
- Detecting Concept and Data Distribution Drifts
- Context-Aware Data Processing for ML Pipelines







Manufacturing solutions in the fields of machine tools, laser technology and electronics as well as consulting, platform and software solutions

### Research topics and fields of interest

- Remote-Quittierung von Warnmeldungen
- Interaktive Generierung von Maschinenprogrammen
- Unique Geo-IDs mit Trägheitsmomenten
- Automatische Optimierung von Maschinenprogrammen



# VOLKSWAGEN

AKTIENGESELLSCHAFT

Car manufacturer

Digitalisation of Volkswagen is driven by DATA:LAB in Munich, DIGITAL:LAB in Berlin, VIRTUAL.ENGINEERING:LAB and SMART.PRODUCTION:LAB in Wolfsburg

## Research topics and fields of interest

- Prediction / modeling of future mobility behavior
- Mesh unification to handle complex topology variations in machine learning
- Robotic, Reinforcement Learning, Digital Twin, Sensoric
- Machine-Learning based Test-Case generation for End-to-End testing of Workflows in Web-Applications
- Machine-Learning based detection of redundant regression tests



Seeing beyond

Optics and optoelectronics industries

### Research topics and fields of interest

- Sensor-data interpolation
- Fusion of Machine Learning and Rule-based Physics for Simulations
- Real-Time-Motion-Deblurring / -Velocity-Measurement
- Feature importance of time series data for predictions
- Detecting human error in sensor based ML
- Robust labelling of (sensor) time series data
- Shared 3D Mapping with multiple AR glasses
- 3D Object Reconstruction with Differentiable Rendering
- End-to-End Optimization of Computer Vision Pipelines
- Camera-to-Cobot Pose Estimation
- Self-morphing Wearables
- AI- & ML-based Components in Production Software for Industry 4.0
- Model based metrology/inspection
- Exploring uncertainty in real life applications of image-to-image translation
- Free-Form-Fitting
- Multimodal AI for diagnostics
- Knowledge guided machine learning for the enterprise





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**APPLICATION  
PLATFORM IS OPEN**

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