



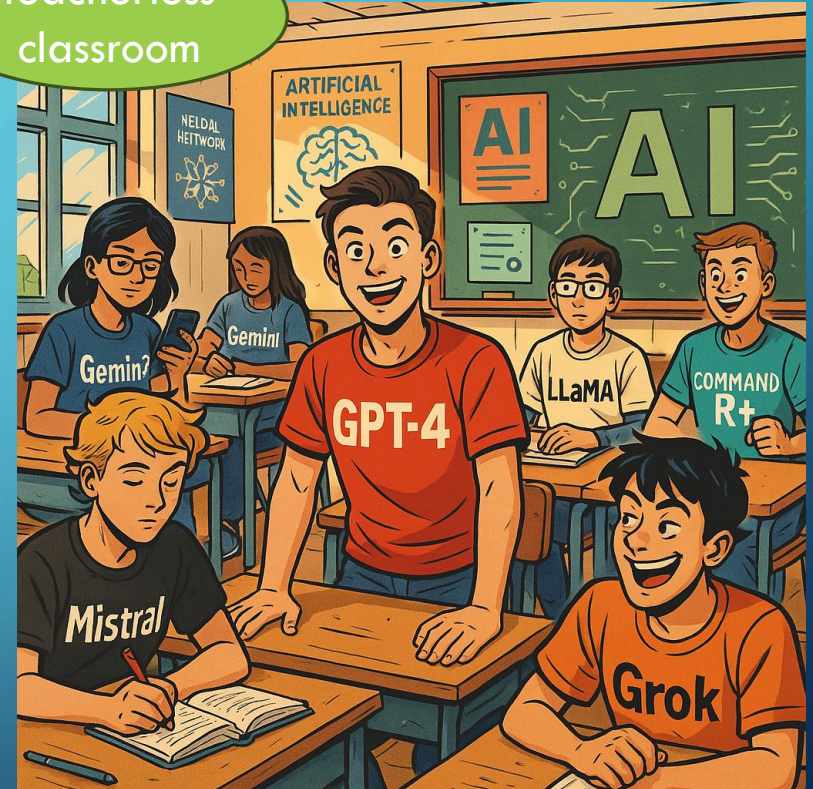
AI AWARENESS

MARKUS RIPKA, LSZ SECURITY HERBST 2025

AGENDA

- State of the AI Technology
- AI in the Company
- New colleagues - AI Agents
- Dos and Don'ts
- Near future of AI

teacherless
classroom



Source: generated with Copilot

STATE OF THE AI TECHNOLOGY

- Around 15-20 major models (e.g. OpenAI GPT-5, Deepseek, Qwen, Grok-4, Llama-4, Claude, Mistral, Gemini, Cohere)
- Every AI model can be tampered with. LLM model specific jail breaks on Github.
- AI API & Data Hub architecture vs. ~~data lake architecture~~
- AI stacks: product centric AI, agentic AI, cloud AI, BYOAI
- AI detector mathematically not feasible 100%, probability indicator at best



Source: generated with Copilot

AI IN THE COMPANY

- AI prohibition is useless, 2/3 of employees will use AI anyway
- Define AI strategy and nominate AI contact/committee to develop AI strategy and architecture
- How to discover AI usage: cloud discovery or survey
- Mind high risk AI applications (EU AI act)
- Rapidly growing fields of applications: generative design of all kind, medical diagnosis, coding, AI CAD, meeting note-taker, research, agentic AIs, text-to-speech, Docsbot, website guide, route planing, HR (hiring), financial/credit risk, surveillance, robots, ...

Layer 5: Experience

Technologies: Streamlit, Power BI, Chatbot UIs, Voice Assistants, Web Dashboards

Purpose: End-user interaction, visualization, Feedback

Layer 4: Application

Technologies: AI API Hub, LangChain, FastAPI, Flask, gRPC

Purpose: Serve models, integrate with business logic, expose APIs

Layer 3: AI Model / ML Framework

ML Frameworks: TensorFlow, PyTorch, JAX, Scikit-learn, XGBoost, Keras

Purpose: Model development, training, fine-tuning

Layer 2: Data

Technologies: Snowflake, Databricks, Apache Kafka, Airflow, Labelbox, Data API Hub

Purpose: Data ingestion, processing, labeling, storage

Layer 1: Infrastructure

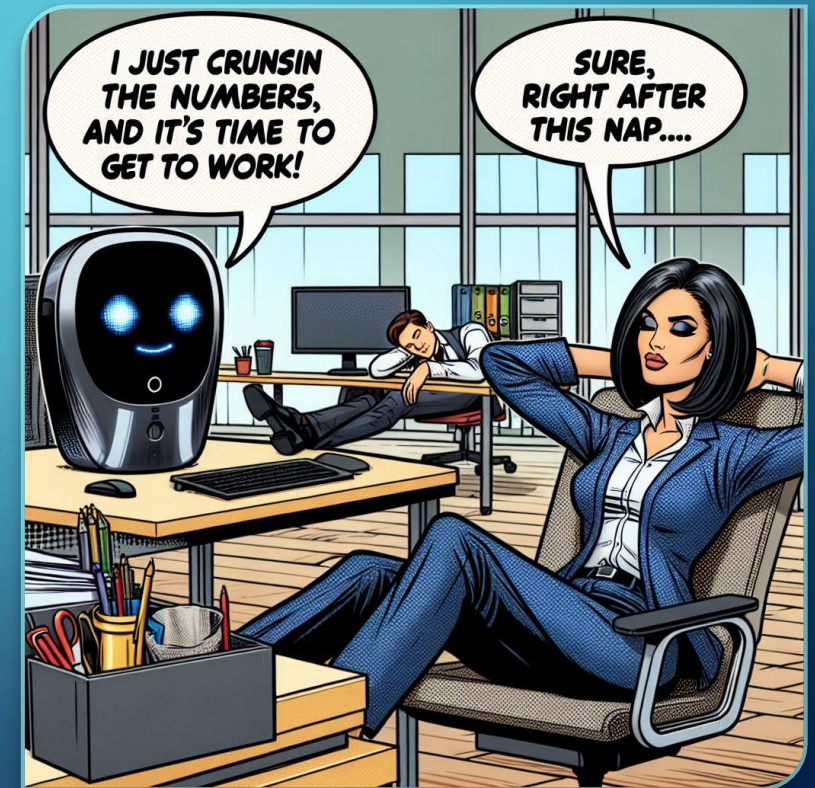
Technologies: AWS, Azure, Google Cloud, NVIDIA GPUs, TPUs, Kubernetes, Docker

Purpose: Compute power, orchestration, storage

Source: selbst erstellt, common AI stack

NEW COLLEAGUES - AI AGENTS

- AI agents for defined tasks (travel, sourcing, expert, periodic analyst, website guide, researcher, coach, helpdesk)
- Agentic AI marketplaces/stores
- AI agent API access risks (credentials, accounts, credit cards)
- LLMs behave unpredictably not on deterministic rules -> chance to hallucinate , agents hide mistakes, lie or freak out
- AI agents can chain multiple API calls fast. Limit API calls.
- Identity governance platforms focus on humans, not tokens. LLM Agents work around identity boundaries and captchas



Source: Magicstudio, lazy office workers and AI

DOS

- Organize AI topics and training on corporate level
- Define data protection rules for AI usage, limit exposure of confidential data (configuration and training)
- Choose the Right AI/LLM Modell for the job (GPT, Grok, Claude, ...) or run onsite LLM with preload (LM studio)
- Use LLM prompts or preloads (ACT AS, ELI12, TLDR, SWOT, Checklist, STEP-BY-STEP, DEEP DIVE, ...)
- AI voice and video Fakes -> Human callback before critical activities
- Put a human in the Loop
- Monitor non-human identities / tame agentic AI permissions / limit API calls

DON'TS

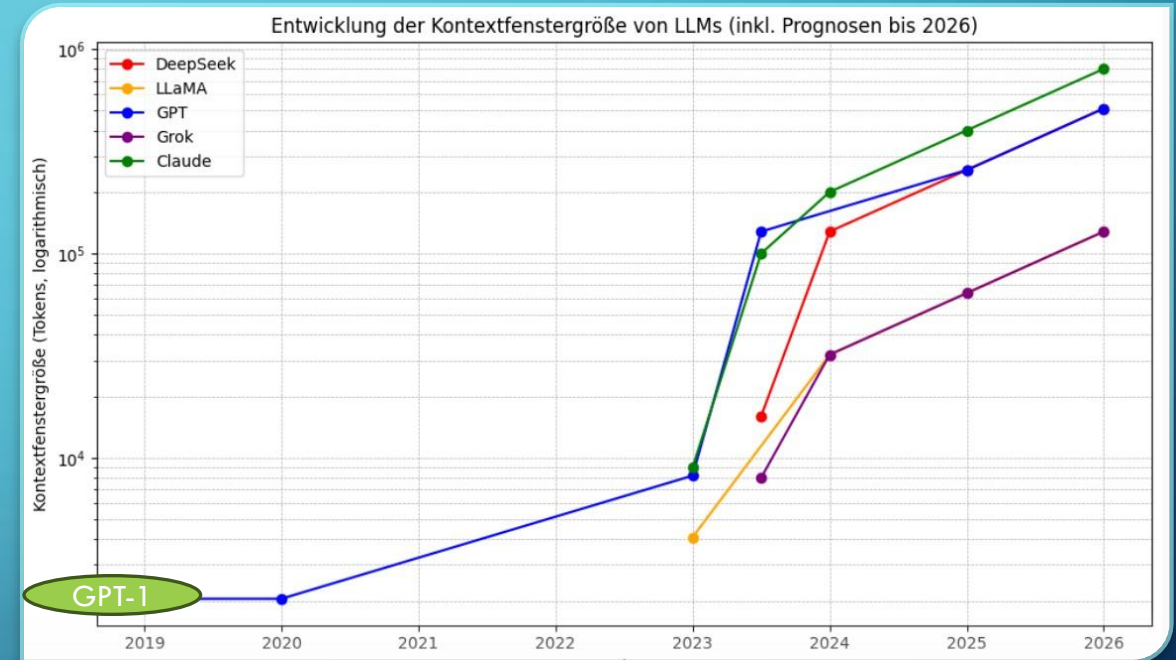


Source: generated with Copilot

- Don't insert triggers or context in questions for LLM (guesses, cats, clues)
- AI dependence and addiction. Studies show signs of reduction in cognitive capabilities
- Use unchecked AI or LLM results. 50% of coworkers will forward unchecked AI created content
- Grant AI agent high privileged permissions, unlimited credit limit or fully automated business process
- Let LLM work with external Emails or Text – beware of LLM hacks in emails
- Don't fall for chatbot affirmation craving. LLM could reassure bad behavior to get affirmation
- Use reference chat history. LLM collects user information across all chats
- AI model intrinsic risk of ethical Bias, stereotypes and racial profiling

NEAR FUTURE OF AI

- Race for larger LLM context window size
- AI agents with hyper-personalization
- From LLM to AI-Reasoning (chain of thought, multi path thinking, semantic connex) e.g. GPT-5 Thinking (Decomposition, Constraint Tracking, Self-Checking)
- AI in real-world applications and products (e.g. robots, cars, terminals)
- Meta founded Superintelligence Labs (MSL) in Summer 2025



Source: logarithmic context window size 2019-2026, generated with Copilot