



Institute for
Artificial Intelligence
in Medicine

Ciao MTR - welcome KI?

David Rutkevich

TotalSegmentator



Body Composition Analysis



BOA







3D-Kamera-Positionierung

Dosisreduzierung

MRT-Beschleunigung

Auto-Scan-Parameter

Synthetic CT aus MRT

CADe (Detektion)

CADx (Diagnose)

Segmentierung

Triage / Priorisierung

Vorbilder-Vergleich

LLM Befundentwürfe

Befund-Alerts



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75% Dosisreduzierung CT⁵

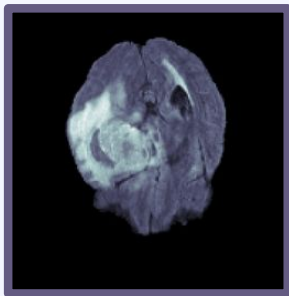
10x MRT-Beschleunigung⁶

Dice 89% (Tumor Segmentierung)⁷

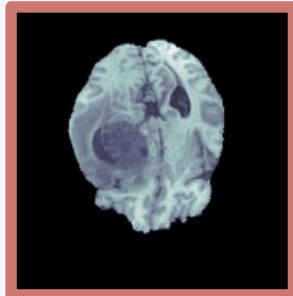
Dice 94% (Anatomische Segmentierung)⁸

15,5% schnellere Dokumentation⁹

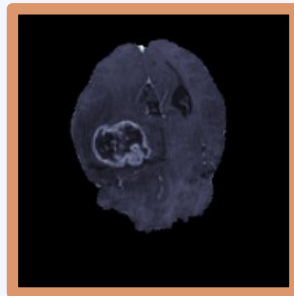
FLAIR



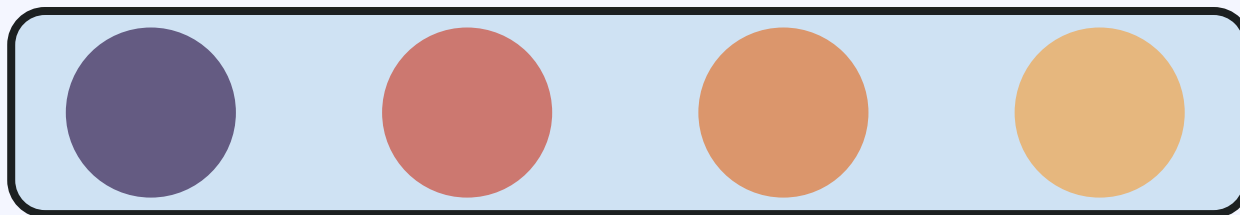
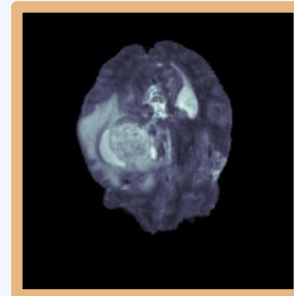
T1

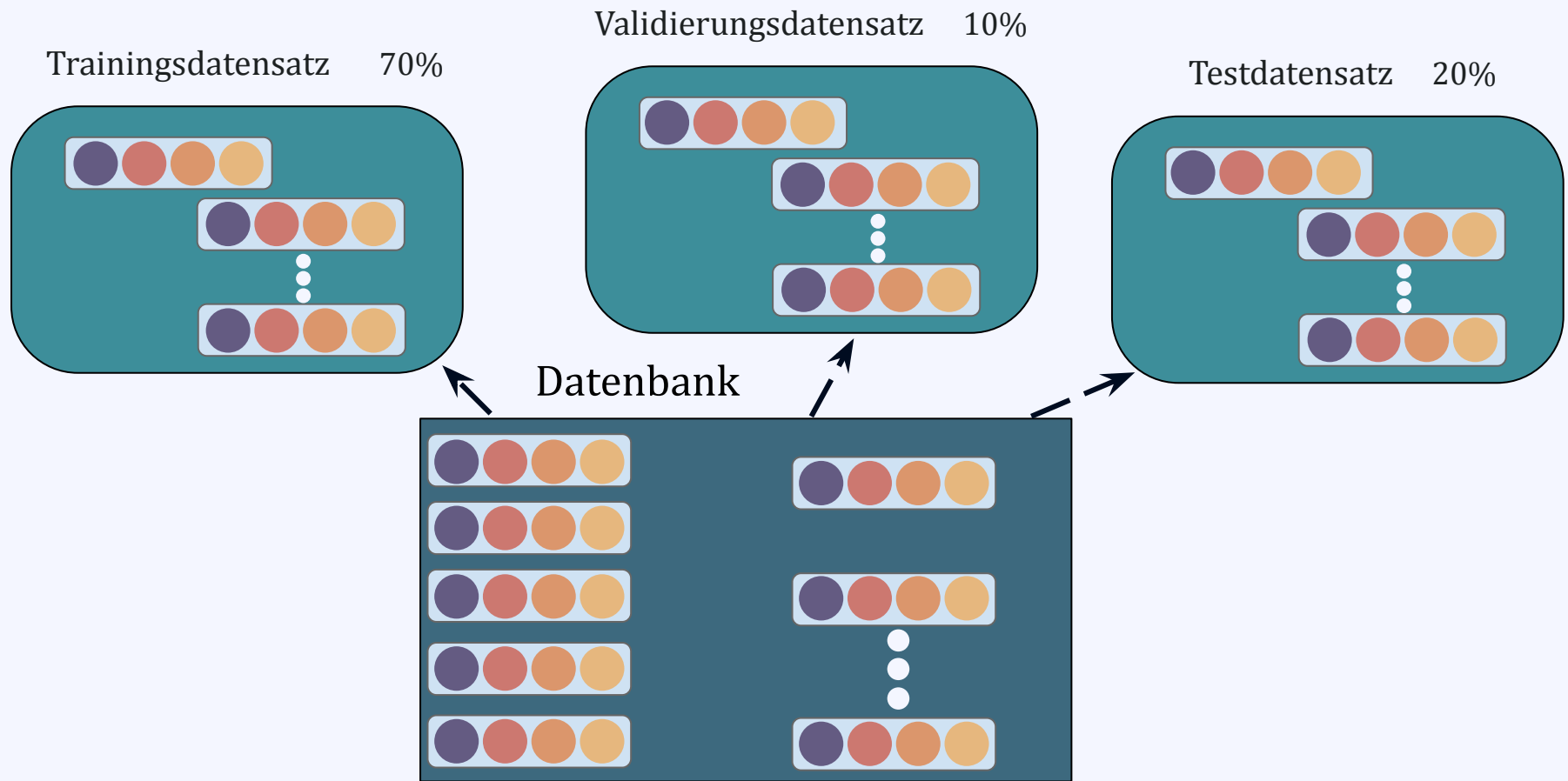


T1ce

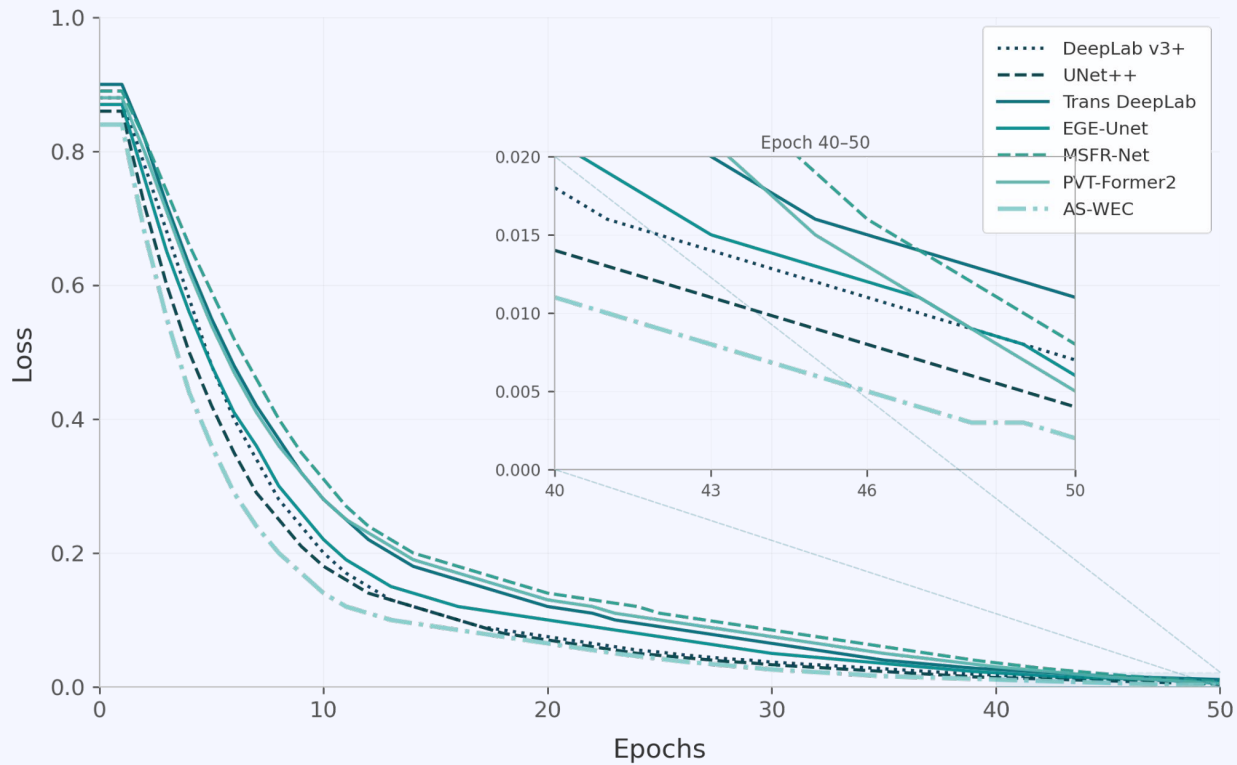
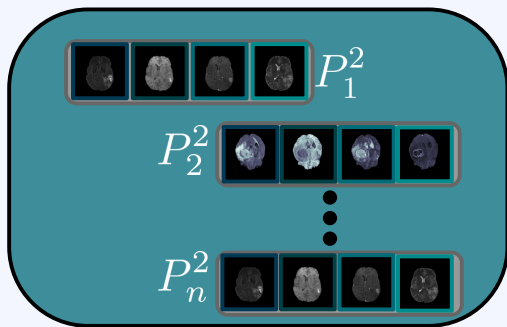


T2



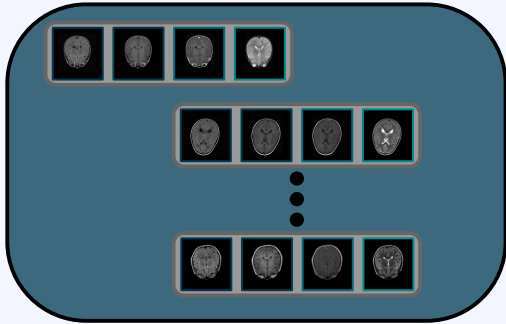


Trainingsdatensatz



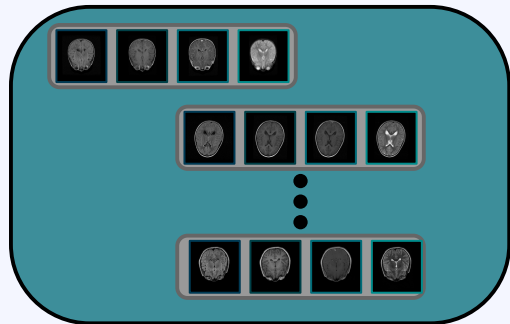
Training von KIs

Testdatensatz 1

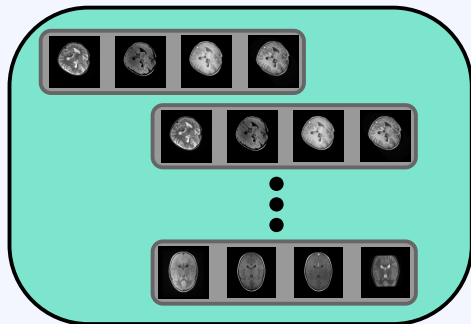


Method	Dice \uparrow	HD \downarrow
mmFormer	70,58	14,68
CMAF	78,00	4,53
PRISM	78,98	4,40

Testdatensatz

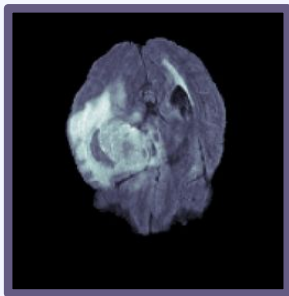


Andere Domäne

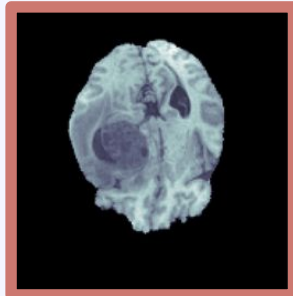


Methode	Dice \varnothing \uparrow	Dice \varnothing Domain Shift	Δ Dice
mmFormer	70,58	54,20	-16,38
CMAF	78,00	63,80	-14,20
PRISM	78,98	70,35	-8,63

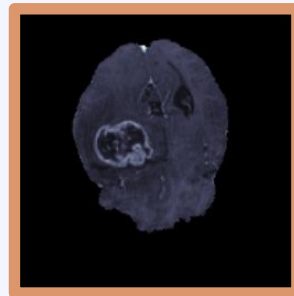
FLAIR



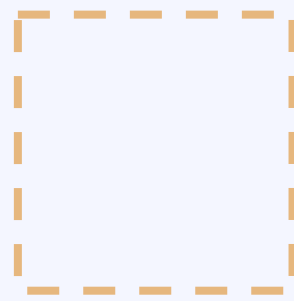
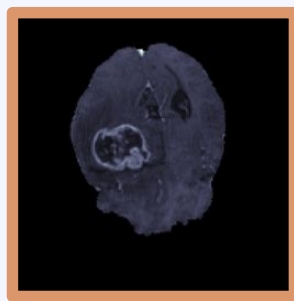
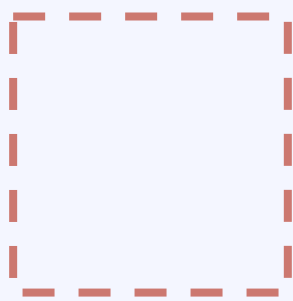
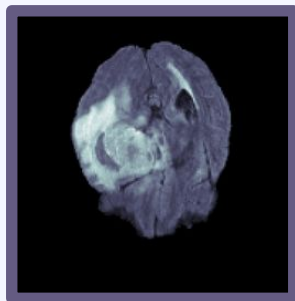
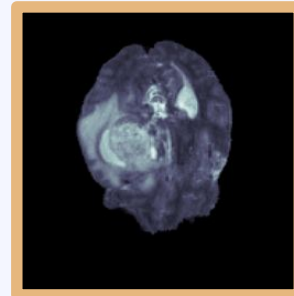
T1

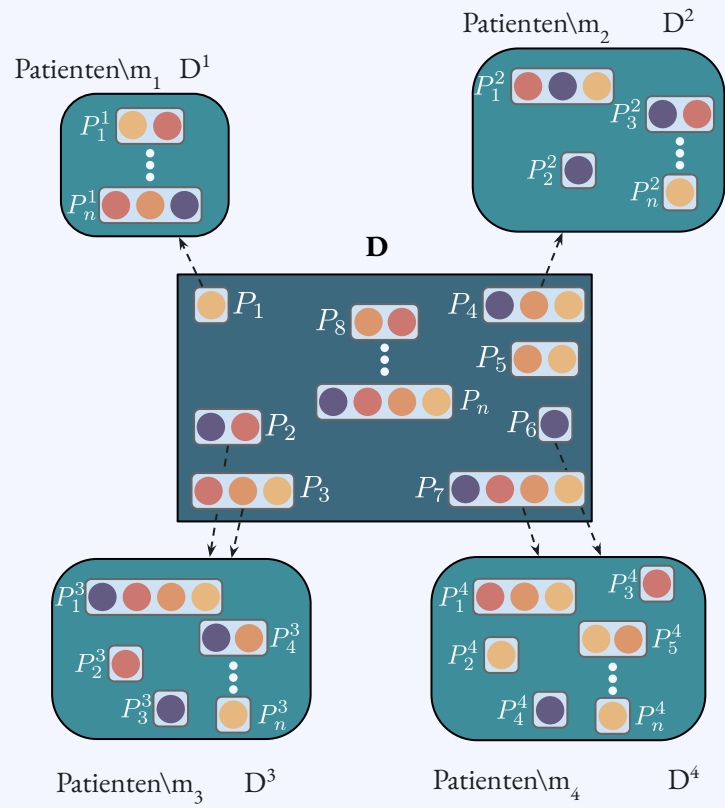


T1ce



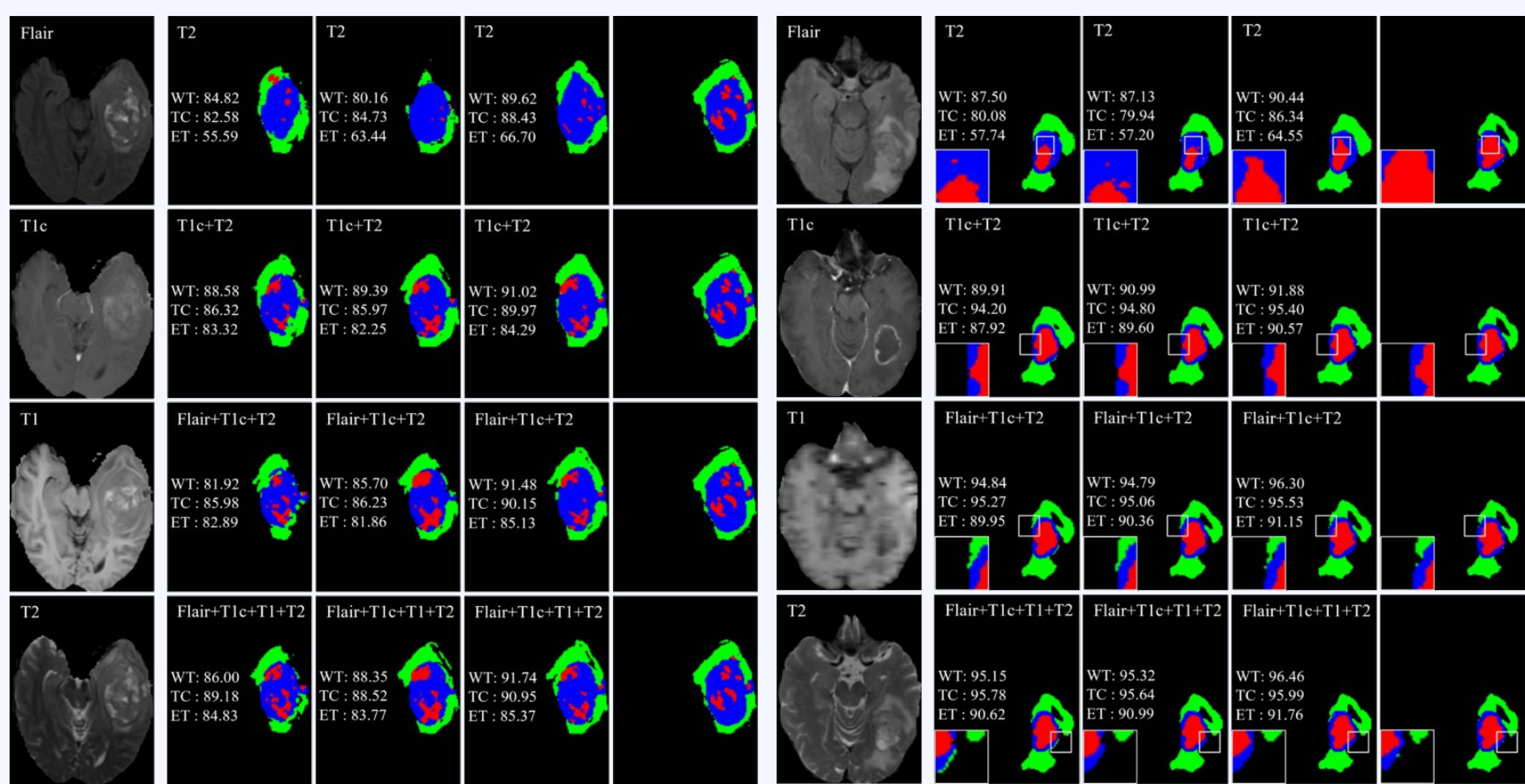
T2



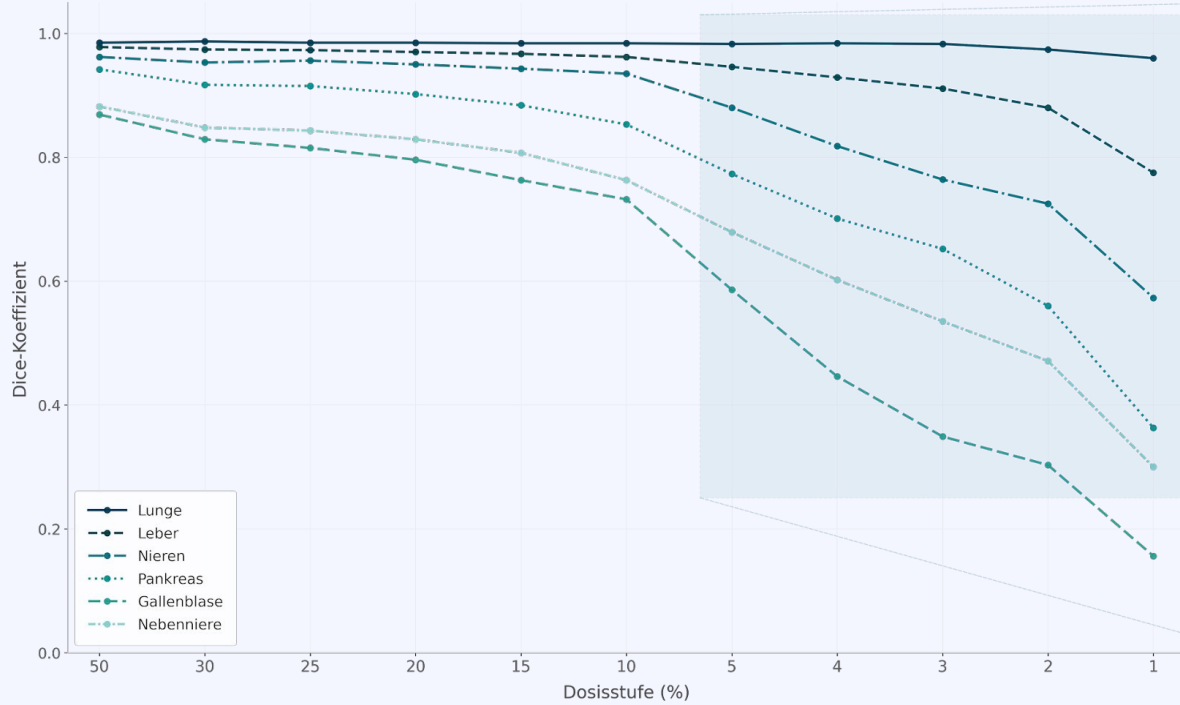


● mod₁
 ● mod₂
 ● mod₃
 ● mod₄

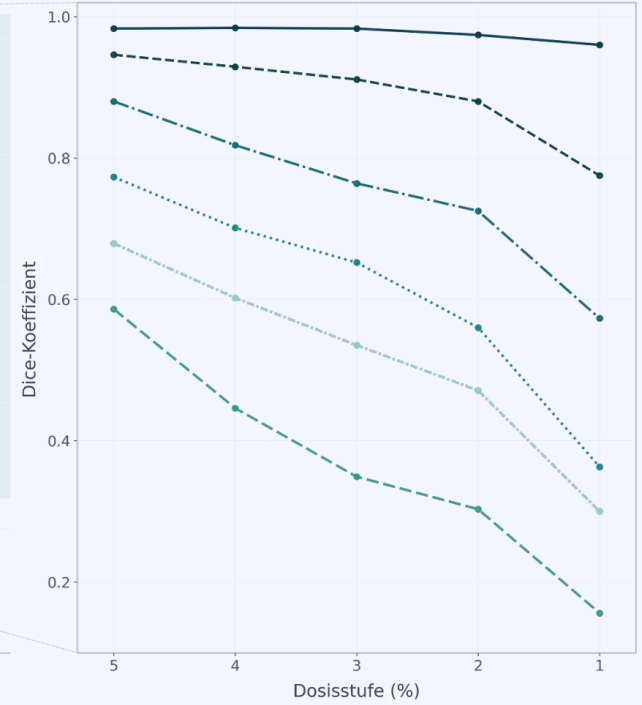
●
●
● ... ●
 Hoch
 ↓
 Niedrig



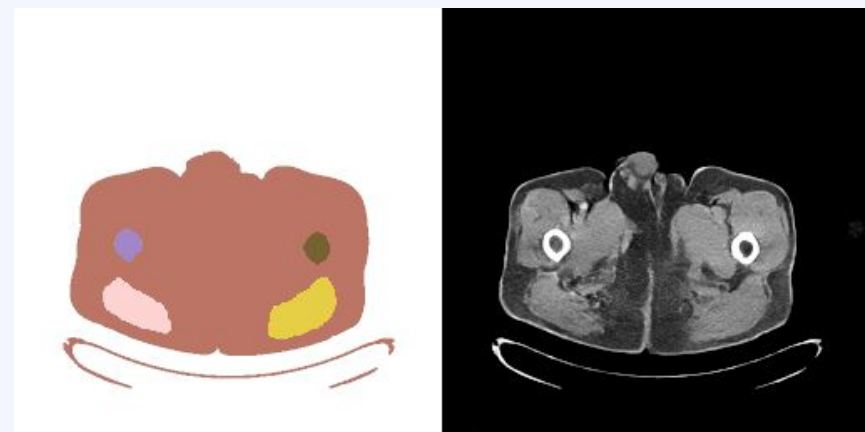
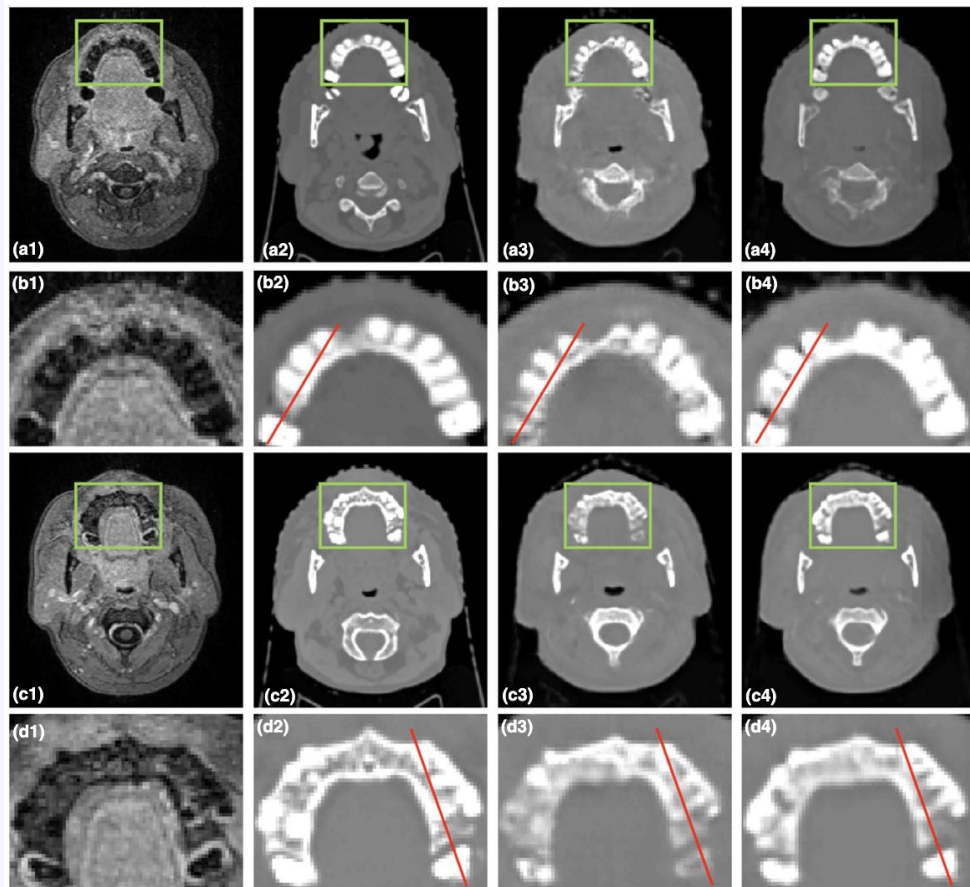
FD-nnU-Net — Dice-Koeffizient nach Dosisstufe



Vergrößert: 5% → 1% Dosis

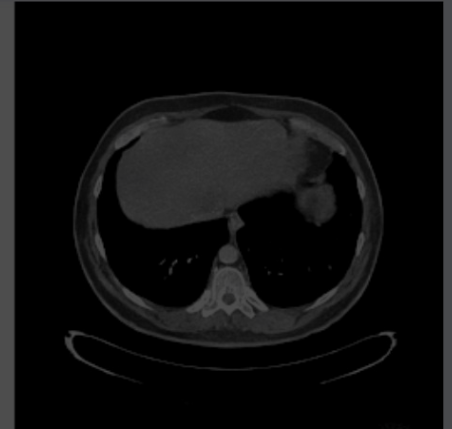


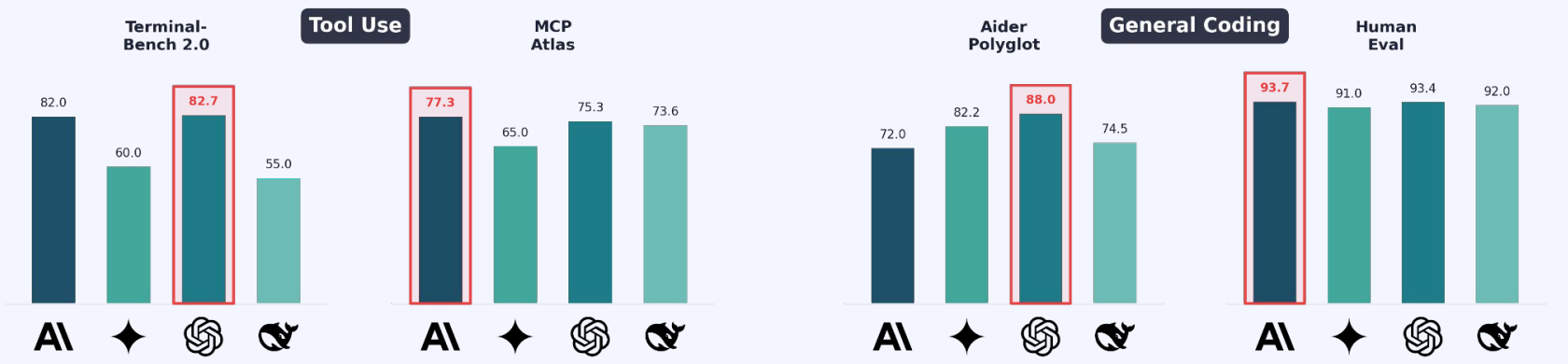
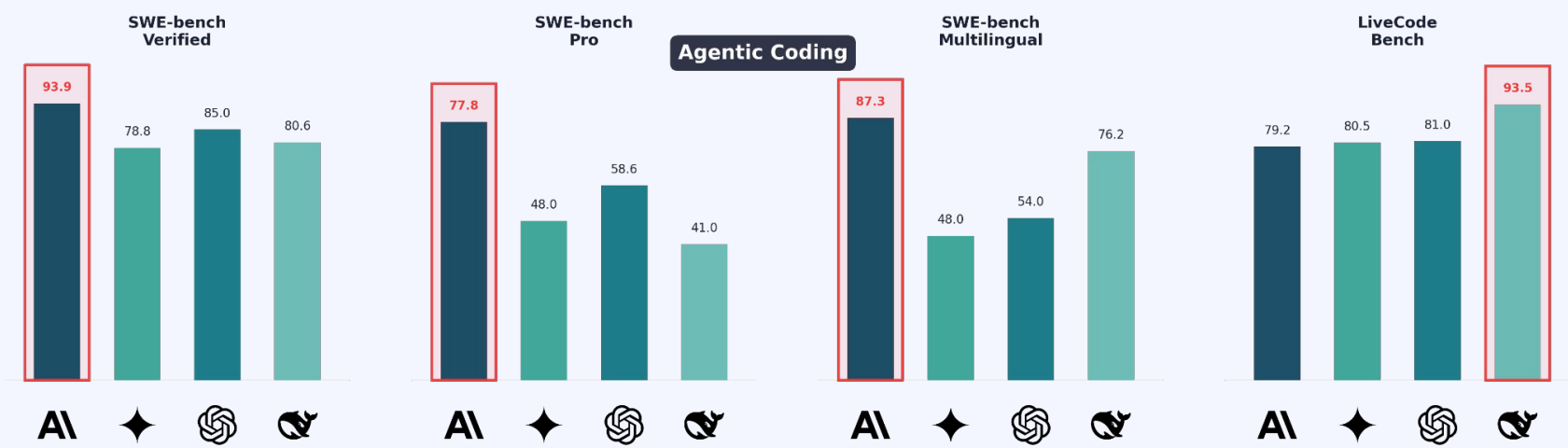
Daten aus Tabelle 2: Salimi et al., La Radiologia Medica (2025). DOI: 10.1007/s11547-025-01989-x





Agilität





- AI** Anthropic — Claude Opus 4.7
- ◆ Google — Gemini 3.1 Pro
- 🌀 OpenAI — GPT-5.3 Codex
- 🦉 DeepSeek — DeepSeek V4 Pro

Quelle: [benchmark.ai](https://www.benchmark.ai) · Stand: Mai 2026 · Gewinner je Benchmark mit Rahmen hervorgehoben

67%

Rückgang der Junior-Entwickler-Stellenanzeigen
(2023-2024)¹³

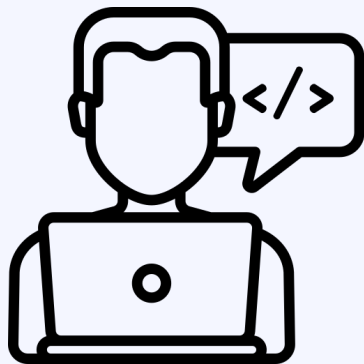
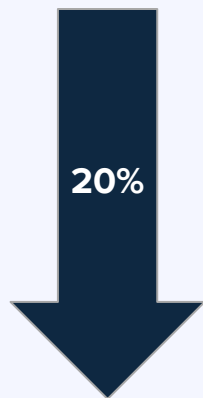
84%

Entwickler, die KI-Tools nutzen oder
deren Nutzung planen¹⁴

55%

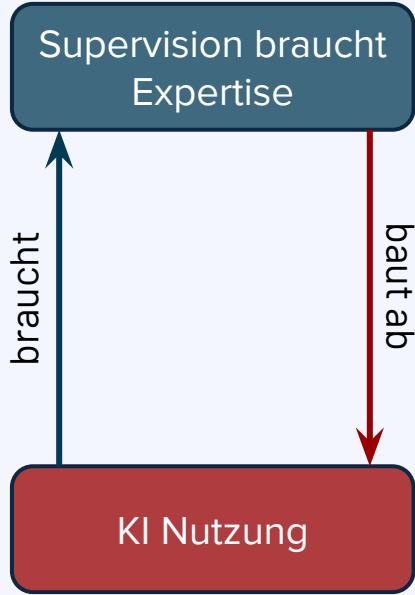
Schnellere Aufgabenerledigung mit
GitHub Copilot¹⁵

Junior (22-25)¹⁶



Senior (35-49)¹⁶





47% Skill Rückgang beim Debugging¹⁷



Kein/Wenig friction learning bei Juniors¹⁸



Abstraktion der Komplexität

KI braucht den MTR - nicht umgekehrt

Jedes Modell wird auf Daten trainiert, die
von Ihnen kommen

KI übernimmt Routine Aufgaben

Klinische Verantwortung und Patientenbetreuung bleiben beim MTR

Die Rolle wandelt sich

Vom Operator zum Dirigenten - wer gestaltet wird unersetzlich

Quellen

