



Effective Machine Learning made easy!

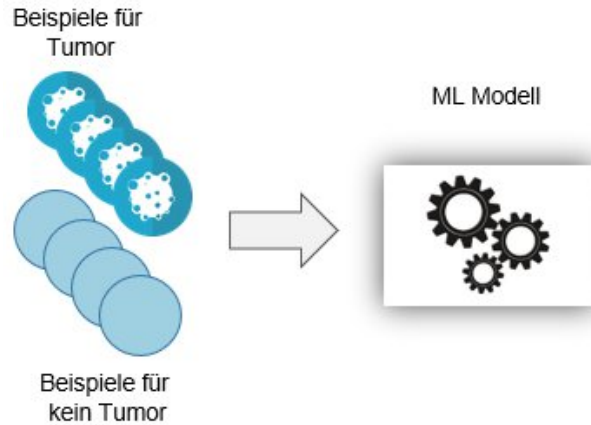
# ONTOLOGY-BASED META AUTOML

Alexander Zender | Bernhard G. Humm

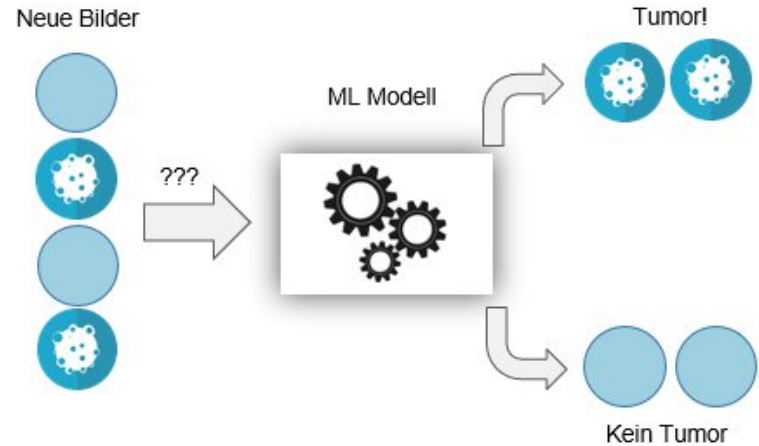
Darmstadt University of Applied Sciences

Komp **A+KI**

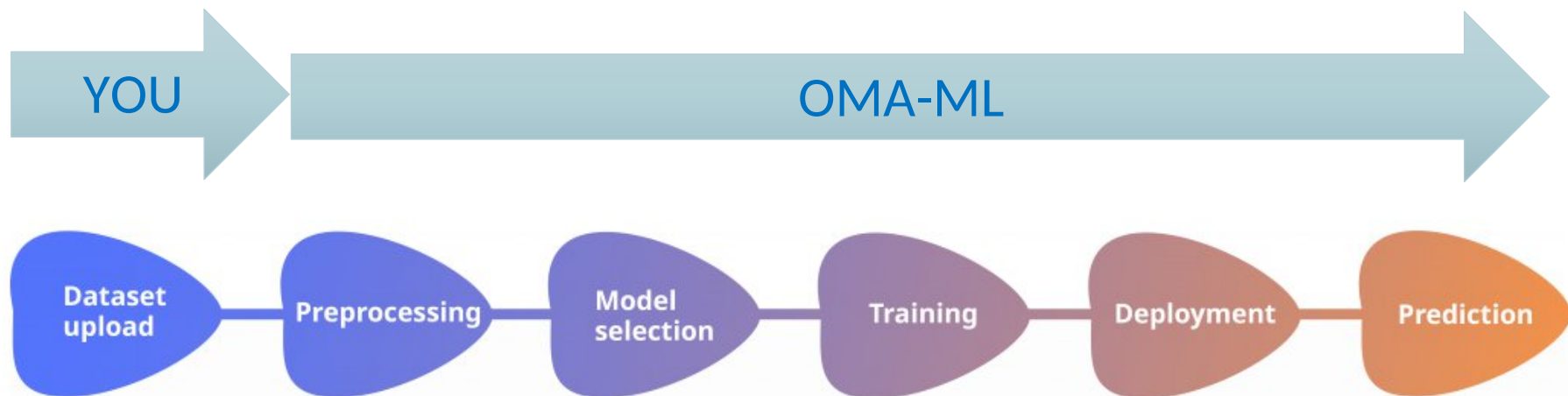
## Phase 1: Training



## Phase 2: Vorhersage



# OMA-ML MAKES MACHINE LEARNING EFFECTIVE



# RULE-BASED TRAINING STRATEGIES


## Top-3 Strategie – Results

-  Up to 70% saving in CO<sub>2</sub>-eq
-  No significant reduction in ML pipeline effectiveness

### EVALUATION SUMMARY

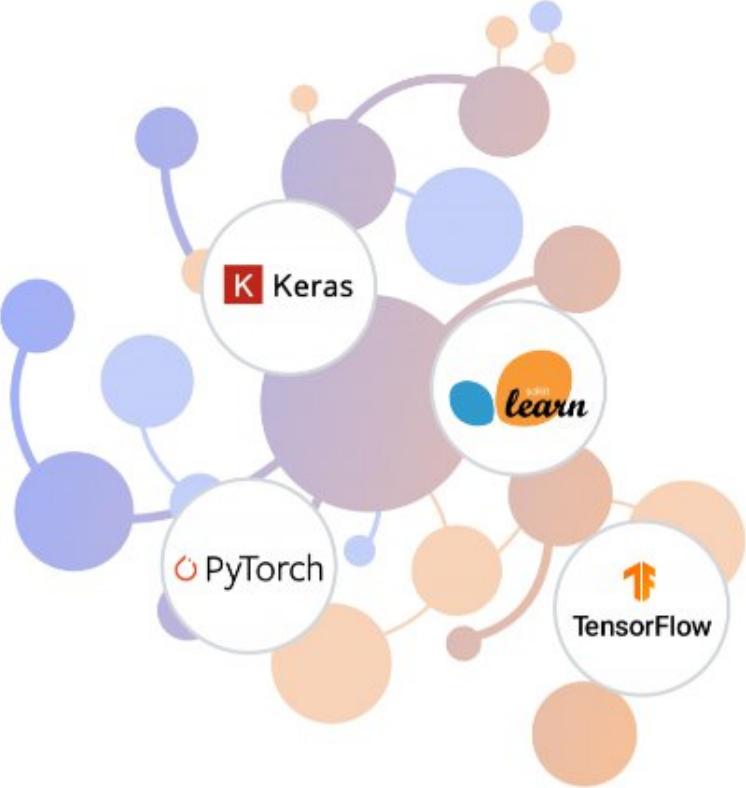
Dataset	Meta AutoML, no optimization			Meta AutoML, top-3 optimization			Comparison	
	AutoML solution	accuracy	CO <sub>2</sub> -eq [g]	AutoML solution	accuracy	CO <sub>2</sub> -eq [g]	Difference accuracy	Saving CO <sub>2</sub> -eq
adult	FLAML	0.88	53.5	FLAML	0.87	22.1	-0.01	59%
amazon	Autogluon	0.95	45.8	Autogluon	0.95	16.6	0.00	64%
sylvine	Autosklearn	0.95	49.96	Autosklearn	0.95	15.0	0.00	70%
credit-g	FLAML	0.78	36.2	MLJAR	0.77	11.7	-0.01	68%
kc1	Autogluon	0.87	37.0	Autogluon	0.87	13.1	0.00	65%

### Rule-based training strategies:

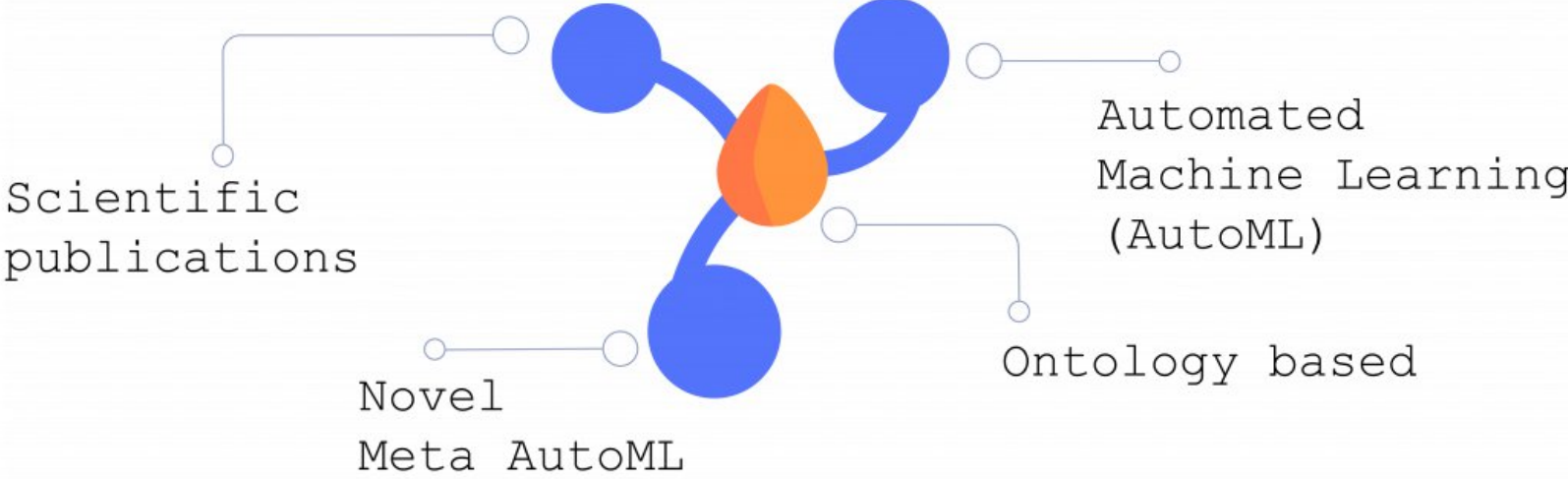
-  significantly increasing the efficiency of Meta AutoML while not significantly reducing the best ML model performance



# OMA-ML AVOIDS VENDOR LOCK-IN

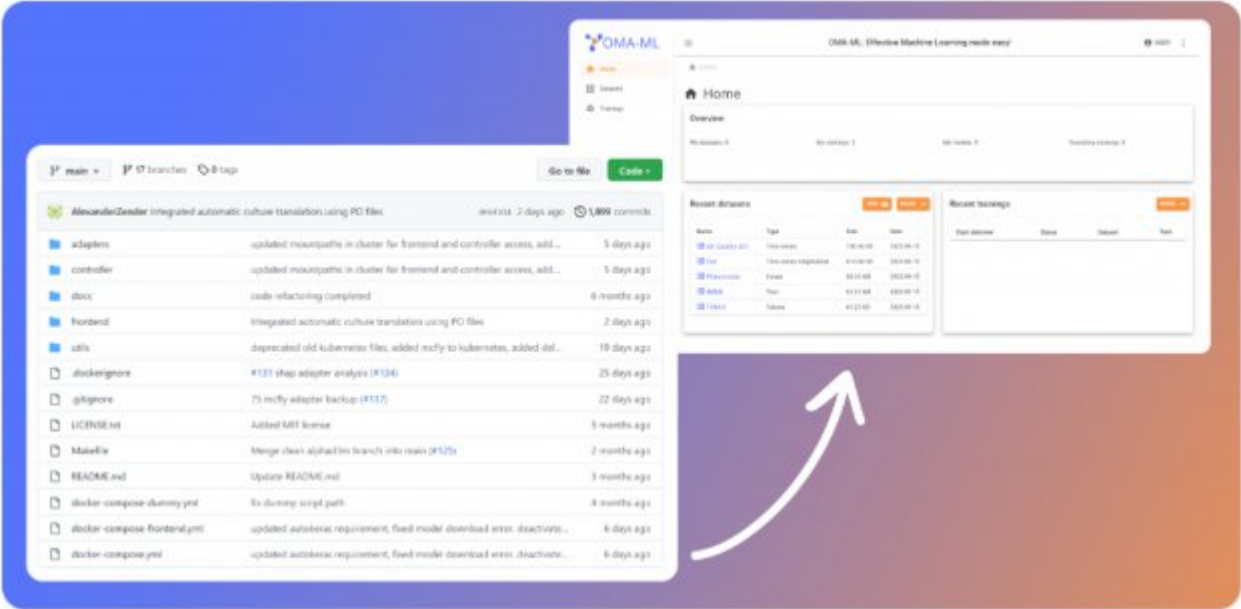


# OMA-ML IS UNIQUE



# OMA-ML IS OPEN SOURCE

Interested in OMA-ML?







THANK YOU FOR YOUR ATTENTION!

Are you interested in OMA-ML?

Kontakt

---

Alexander Zender  
Darmstadt University of Applied  
Sciences

[Alexander.zender@h-da.de](mailto:Alexander.zender@h-da.de)



MEMBER OF



GEFÖRDERT VOM

Bundesministerium  
für Bildung  
und Forschung