Table 1: Performance evaluation of the SpikingBrain-7B pre-trained model. All models are tested with the HuggingFace framework and evaluated using a perplexity-based method. Except for Qwen2.5, the other baselines are trained on limited Chinese data, resulting in clear disadvantages on CMMLU and C-Eval.

	SpikingBrain-7B	Falcon-Mamba zuo2024falcon	Mistral mistral2023mistral	Zamba-v1 glorioso2024zamba	Llama3.1 dubey2024llama	Qwen2.5 yang2024qwen2 (base)
Params	7B	7B	7B	7B	8B	7B
Tokens	+150B	5.8T	–	1T	15T	7T
Complexity Type	Linear	Linear	Linear	Hybrid	Quadratic	Quadratic
Benchmarks						
MMLU hendrycks2020mmlu	**65.84**	63.24	62.56	58.19	65.74	74.21
CMMLU li2023cmmlu	**71.58**	42.50	44.58	38.42	52.44	81.73
ARC-C clark2018arcc	**43.32**	47.53	45.13	37.18	51.96	44.04
HS zellers2019hellaswag	70.89	71.50	75.81	52.02	71.60	72.81
Ceval huang2023ceval	**69.80**	41.93	47.04	36.40	51.46	81.60