	Model-based Efficient Reasoning Reasoning Reasoning Reasoning Output-based Efficient Reasoning Dynamic Reasoning Dynamic Reasoning Paradigm	via Length Reward SFT with Variable-Length	e.g. Kimi k1.5 [109]; O1-Pruner [76]; L1 [1]; Training [3]; Demystifying [141]; DAST [98]; MRT [91]; Self-adaptive [136]; HAWKEYE [96]; ThinkPrune [42]; e.g. Distilling 2-1 [142]; C3oT [48]; TokenSkip [124]; CoT-Valve [79]; Self-Training [82]; Learn to Skip [70]; Token-Budget [37]; Stepwise [22]; Z1 [143];
		Representation	e.g. Coconut [39]; CODI [99]; CCoT [12]; Heima [97]; Token Assorted [103]; Loop [93]; SoftCoT [133];
		Reasoning —	e.g. Speculative Rejection [105]; Sampling-Efficient TTS [119]; DPTS [25]; Certaindex [32]; Dynasor-CoT [33]; Fast MCTS [55]; ST-BoN [119]; More is Less [123]; RSD [60]; Speculative Thinking [137]; LightThinker [146]; INFTYTHINK [134]; SCoT [125]; RASC [115]; Adaptive Reasoning [144]; AdaptiveStep [72]; Self-Calib [46]; CISC [108]; ESC [57]; DSC [117]; PathC [153]; RPC [152]; Sleep-time Compute [63]; SpecReason [86]; TOPS [138]; Retro-Search [75]; ThinkDeepFast [116];
Taxonomy	Input Prompts-based Efficient Reasoning Routing by Question Attributes		e.g. Token-Budget [37]; Chain of Draft [132]; Token Complexity [52]; Concise Chain-of-Thought (CCoT) [92]; MARP [8]; ThoughtMani [71]; NoThinking [78];
ı		Question	e.g. Claude 3.7 Sonnet [2]; SoT [4]; Self-REF [16]; Confident [14]; RouteLLM [84]; THOUGHTTERMINATOR [90];
	Efficient Data and Models Pruning & Quantization & Distillation		e.g. LIMO [140]; s1 [81]; S ² R [77]; Light-R1 [121];
		Quantization &	e.g. Struggle [58]; Strong Verifiers [102]; TinyR1-32B-Preview [106]; Mixed Distillation [13]; Counterfactual Distillation [30]; Feedback-Driven Distillation [154]; SKIntern [61]; Adaptive Thinking [9]; PRR [151]; CompressionReasoning [147]; TwT [131];
	Benchmark & Insights	Evaluation & Benchmarks	e.g. 1B vs. 405B [68]; Sys2Bench [88]; Danger [20]; Inference-time Computation [65]; Impact [47]; Bag of Tricks [66]; S1-Bench [148]; CompressionReasoning [147]; QuantRM [67];