system	model	supervision	${f algorithm}$	\mathbf{FE}	\mathbf{CE}
GIZA++	IBM model 4	unsupervised	EM	6.36	21.92
Berkeley	joint HMM	unsupervised	$\mathbf{E}\mathbf{M}$	5.34	21.67
$fast_align$	log-linear model	unsupervised	EM	15.20	28.44
$_{ m Vigne}$	linear model	supervised	MERT	4.28	19.37
this work	log-linear model	unsupervised	SGD	5.01	20.24