USC University of 1 Neural Program Synthesis from Diverse Demonstration Videos POSTECH² Southern California Shao-Hua Sun^{*1} Hyconyco Nah^{*2} Street C Shao-Hua Sun^{*1}, Hyeonwoo Noh^{*2}, Sriram Somasundaram¹, Joseph Lim¹



shaohuas@usc.edu shgusdngogo@postech.ac.kr

sriramso@usc.edu

limjj@usc.edu



https://shaohua0116.github.io/demo2program/

nods		Executio	n Progran	1 Sequence
ction baseline		62.8% (69.1	- (%)	-
hesis baseline		64.1%	42.4%	35.7%
summarizer (ours)		68.6%	45.3%	38.3%
+ multi-task loss (or	urs-full)	72.1%	48.9%	41.0%
)oom				
thods	Exec	cution	Program	Sequence
uction baseline	35.1%	(60.6%)	-	-
thesis baseline	48	.2%	39.9%	33.1%
s-full	78	4%	62.5%	53.2%

• Training with 25 demos, generalization to more / less demos

Advantage of summarizer is bigger with more demonstrations

hods	k=3	k=5	k=10
thesis baseline	58.5%	60.1%	64.1%
summarizer (ours)	60.6%	63.1%	68.6%
rovement	2.1%	3.0%	4.5%

Single IFELSE statement with 1 condition, 2 different actions

thods	Execution	Program	Sequence
action baseline	26.5% (83.1%)	-	-
thesis baseline	59.9%	44.4%	36.1%
s-full	89.4%	69.1%	58.8%