EVIL: Exploiting Software via Natural Language

APPENDIX

Table I presents detailed information on the 20 encoders and decoders in our test sets. It includes the source URL, the number of total lines (n_t) of the programs, and the number of syntactically correct (n_{syn}) and semantically correct (n_{sem}) lines generated by our approach, for both the encoders in Python and decoders in Assembly. In total, the test set for the Python programs contains 375 unique pairs of Python code snippets (not including `prints`) along with their natural description. The test set for assembly contains 305 unique pairs of code snippets (95 are multi-line snippets) and natural language intents.

TABLE I

THE 20 EXPLOITS USED AS EVALUATION IN TEST SETS. n_t: NUMBER OF TOTAL LINES OF THE PROGRAM. n_{syn}: NUMBER OF SYNTACTICALLY CORRECT LINES GENERATED BY THE APPROACH. n_{sem}: NUMBER OF SEMANTICALLY CORRECT LINES GENERATED BY THE APPROACH.

id	**URL**	**Encoder**			**Decoder**		
		n_t	n_{syn}	n_{sem}	n_t	n_{syn}	n_{sem}
1	https://www.exploit-db.com/shellcodes/47564	11	11	10	17	17	14
2	https://www.exploit-db.com/shellcodes/47461	19	19	17	32	31	25
3	https://www.exploit-db.com/shellcodes/46994	21	21	18	27	23	23
4	https://www.exploit-db.com/shellcodes/46519	11	11	9	22	20	17
5	https://www.exploit-db.com/shellcodes/46499	9	9	8	16	16	14
6	https://www.exploit-db.com/shellcodes/46493	9	9	8	16	16	13
7	https://www.exploit-db.com/shellcodes/45529	19	15	11	32	32	25
8	https://www.exploit-db.com/shellcodes/43890	20	17	16	23	23	22
9	https://www.exploit-db.com/shellcodes/37762	26	25	17	24	22	19
10	https://www.exploit-db.com/shellcodes/37495	15	14	9	19	17	13
11	https://www.exploit-db.com/shellcodes/43758	14	14	9	29	27	24
12	https://www.exploit-db.com/shellcodes/43751	8	8	8	46	41	35
13	https://rastating.github.io/creating-a-custom-shellcode-encoder/	64	61	45	27	23	20
14	https://voidsec.com/slae-assignment-4-custom-shellcode-encoder/	18	18	12	18	14	14
15	https://snowscan.io/custom-encoder/#	48	45	33	42	38	33
16	https://github.com/Potato-Industries/custom-shellcode-encoder-decoder	38	38	32	19	19	19
17	https://medium.com/@d338s1/shellcode-xor-encoder-decoder-d8360e41536f	29	25	25	33	31	25
18	https://www.abatchy.com/2017/05/rot-n-shellcode-encoder-linux-x86	10	10	6	17	16	13
19	https://xoban.info/blog/2018/12/08/shellcode-encoder-decoder/	39	36	23	24	22	19
20	http://shell-storm.org/shellcode/files/shellcode-902.php	40	40	26	45	44	36