

Table 5

The results of computing the value of mean shift between hashes of the obfuscated and source code malware

| File number in the dataset | Source code hash values | Obfuscated source code hash values | Percentage of malware samples computed using only convolutional neural networks | | | Percentage of malware samples computed using mean shift method in convolutional neural networks | | |
|----------------------------|--|--|---|----|-----|---|----|-----|
| | | | Training epoch | | | Training epoch | | |
| | | | I | II | III | I | II | III |
| 1. | b6efb93897f6b2ec33eb e63fc3f3f9fc9f6fbfef | cf973ee7f7e3ee6f9bfe 7cbfbfc979fefb3ee97 | 31 | 34 | 35 | 55 | 57 | 59 |
| 2. | efbfcf7f99cb97f7ef9 fc9f38f3f387693e69e3f | cfcbf9e3ee93f6ef2e96 c63ef6c3e6f9f993ec38 | 31 | 36 | 35 | 61 | 63 | 64 |
| 3. | 15236c7fbf93eec3eb3e 6fcefe3ee6f9fc9f7c7f | 9cbcf04f79f9ec9f9f6f f2383f9fe3e9933ee9fe | 34 | 39 | 38 | 62 | 66 | 64 |
| 4. | 74cfecf38ec7fece3eeb fcb2ece3f3f938cfecf | cf7c63fe3e3e938fc3ee fe2efec63fe3e383eb3e | 31 | 30 | 32 | 55 | 57 | 58 |
| 5. | 67bf3869e96fb993e046 9efb3e38f2ebf9cef9bf | fe9e6e3e9e3e9f7efe6b 3e73eefbc79e6bfe93fb | 34 | 36 | 38 | 51 | 53 | 54 |
| 6. | 3eb6693eefcec7efbfcf 3e99c38cf693ecef6cf9 | 3eb2387ecfcfe9f3f9c7 f38efbfcfeb6f7f79bfe | 30 | 31 | 32 | 52 | 54 | 52 |
| 7. | c9fef763ecb7efe33e38 cecf3fbf9fefb9f7ce3e | 7e3e2ef3be2e767fec7 3ee3f7ecf9eb9e6fec9e | 29 | 31 | 34 | 54 | 58 | 59 |
| 8. | 0bfbf07f638f09cbefe 69f6f9ecfc938fc93ee99 | c6cfe9cfe66c3fc9cf be3f38cf733e9c3eeb9f | 30 | 34 | 35 | 52 | 54 | 56 |
| 9. | 3e79fe238cf9cef9f967 c33e3ecbcf9938ec93e9 | f97ef6f63e7f73e3fb2e f99fc7fb382efec7e3ec | 30 | 34 | 36 | 55 | 56 | 57 |
| 10. | 38cecb9f2efe93e3ef9 cf3f9ef638fbfc9f97bfe | 3ef6cfc38b3f96fc3ef c9fe7efc3eebefcf9cbe | 31 | 35 | 36 | 57 | 59 | 58 |
| 11. | 9fef63e3ef72e33eefbc ebef7f9f6bb69efcbb3e | 97ef6e9efecbe33eef99 fc3e7c63eefef93f38e9 | 30 | 34 | 35 | 57 | 59 | 61 |
| 12. | f9e9b3ee9fc96c967c3f 3fef3f9f693efe3eebc9 | 97ef6e9efecbe33eef99 fc3e7c63eefef93f38e9 | 34 | 35 | 36 | 56 | 54 | 58 |
| 13. | 33eec6f6ecfebfe6638f f2e3fe3ec38e92ef3f3f | 3fc3e9bcfe33e3ef9bef 389c3efecf63fcbf9f9f | 30 | 34 | 36 | 57 | 58 | 61 |
| 14. | 9efef6fe6f67be933efb fc93efe99c9cfc9f6ef | f73e9ef9fbc6383ecfbf fe7cfb9f93e9f93e3ebe | 34 | 36 | 37 | 61 | 62 | 63 |
| 15. | bf973e9fefc9c386f9cf c3e9fe9cef7f9f9fec6f | f73e9ef9fbc6383ecfbf fe7cfb9f93e9f93e3ebe | 31 | 35 | 37 | 55 | 59 | 57 |
| 16. | fc99fc33efc3efeb3ecf cf7c3efeb3e7ec38f9fe | febe969efcfce2e7cef7 c3fc99fef999c3ef6ece | 34 | 35 | 36 | 55 | 57 | 59 |
| 17. | ceb3e9e67ef6f9f9c79b 3e3fbf386fec9ef99fc | e3ee99efefce9f6f7b3e e93fbc9769f993ee93ec | 34 | 36 | 38 | 59 | 57 | 58 |
| 18. | bf7e3eefcfec3e3e3ecf bf7efce7f7ec38f93f3f | 7c9e9fef383f3ec3fc3e e3ecf9ef7f67e9f9c3f6 | 30 | 35 | 36 | 61 | 63 | 62 |
| 19. | fc6c9ce9c6fe999fc997 6fc3f6f9f933e9c9e3e6 | 7ec3efe6f9cecbefcfce ef9f38f9cfecf9f33ef | 52 | 56 | 57 | 72 | 74 | 79 |
| 20. | e3e04e7f7c9fc6cfbf fecefcf7cfe93ee93efb | fcfc3eef69fe3e9efe3e fe67cbf383fcbefebcf9 | 31 | 35 | 36 | 52 | 51 | 48 |