

Table 3

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. | 54f4bfb9e7452547197f9df7c9d6c1e72f95f647 | b94cedd41f1b7f5c6459c2de2d7f44d144fe769d | 27 | 25 | 26 | 42 | 49 | 52 |
| 2. | 2c7f91e1e1bbe27f44bf6dedbf4a2fef2ea1d24 | bee7ae2a7154f5bcd75fa571eae7a29c5bdfaa | 20 | 22 | 24 | 34 | 39 | 42 |
| 3. | afa29dacff2ff7dcf65e19b67eeff9eaad1dfe55 | ea62f2fefdbef2e6b14de5af4af7a467afdf7d5e | 27 | 29 | 28 | 44 | 49 | 47 |
| 4. | dea2edfdde2fff724d6dc11d75c25a99d167faeb | adadc4fde9954fc7e6ade7592d7beb51e26ec6ad | 23 | 22 | 22 | 34 | 38 | 39 |
| 5. | 65f9bd7aed6abee9eefd576dfdee11fef74479a | 169e542d64247454d5e1f755bf9fe96b6d174d12 | 20 | 21 | 20 | 34 | 33 | 37 |
| 6. | 5dfe117e256cd5544fc2bd145ddfe29dfe9b1db | ce5dec29d7bcce97dd7eebe2a7577ae67d26ee54 | 24 | 28 | 25 | 46 | 49 | 48 |
| 7. | fae5e192121eabfedabf9f5ea6abdbcbcl1d7aceb | f6746266ea512121ffada791f9db55feefbef77e | 29 | 28 | 25 | 46 | 49 | 52 |
| 8. | f44f9e24c9efb74ffbbdcecf6eddee4f624d55e | a4cc2df6ed7e9ea9fcdfbd9d1feaff1cddbdebd67 | 30 | 33 | 32 | 48 | 52 | 51 |
| 9. | 942dae6d2a619df62627aec7ddb62c1ffdfbcbcb | 5f2fc7d92b5ef75dc7fda975f266b6bed456da5d | 31 | 28 | 32 | 44 | 47 | 46 |
| 10. | ec1ac1c5eda6eff49efbd7f724e14dc11c4de6c2 | edda4dfec7c54d419674b42d714f2edacdde591 | 37 | 34 | 38 | 49 | 52 | 54 |
| 11. | a1f64f6dc674a249c9ffedc959cd1296effd91e9 | 2c7e9e2277fa5ebddeebf1c1eaeadfbdcce65f75 | 37 | 37 | 39 | 50 | 54 | 57 |
| 12. | 5e5b1df9d1d1fb9dd1c19f79ef2262eeba2ec4a5 | 2ed1267cfe54174dc7ff6fc4247dc6526ffd74db | 34 | 37 | 36 | 55 | 59 | 57 |
| 13. | 76ec1adffedebdcdcc1ee961d614ca2ff5fb5de | ae5f751ebdbd5f27ce9beaceffbc2c9dca9411 | 37 | 41 | 44 | 58 | 62 | 61 |
| 14. | f1ddf4e2ea59c5f75592ededd76ef2edfa9cde56 | 1e2ffe5557566cd5fbce1dabaeba2df512d9579c | 40 | 44 | 42 | 52 | 57 | 59 |
| 15. | 79de9e9ffd5b1aeacee69e7eeadf9ed5d64d16 | 45de554c9414aaf1965a5d957e167dfcaeeccbd | 31 | 33 | 30 | 39 | 42 | 40 |
| 16. | 1652a5c66a97d6c5d217aecdb1941eef2fad7edb | 2fde1fceb1dec1e945feb62417515d5e2da5f7df | 28 | 31 | 34 | 43 | 48 | 47 |
| 17. | f2b5bfbf1522d279e9e2de4b15271dfc2dcffc2c | 7bd4ebf916b1bf5a76e56df622ff57b55ad7b7e5 | 37 | 34 | 38 | 52 | 49 | 47 |
| 18. | 274c2c2ebbf2972a475f91f9e97eb1f72fb5cd | f26dbdc47f1cde212cef9c5de1517957e44ddc96 | 42 | 44 | 46 | 52 | 57 | 55 |
| 19. | f9b1dcc717f7ef77d54f2aec211d161d5ee55d5 | 1fffbdbd6ffea9b17ea46ddcd7de75197594febb | 42 | 45 | 42 | 58 | 62 | 61 |
| 20. | 6be714b1e2ff4ff116ced471f5c9e4e5bac2ebfd | dd7cdf5bc2b222f6c7f6b65d6e6f6ce7d9275ac | 37 | 39 | 41 | 55 | 59 | 57 |