By writing

$$K(x,y) = \sum_{s \in \{0,1\}^m}{}' \mathbb{1}_{s \text{ is a substring of } x} \cdot \mathbb{1}_{s \text{ is a substring of } y},$$

we see that if we define the 2^m-dimensional vector $\Phi(x)$ whose components correspond to the substrings $s \in \{0,1\}^m$ and

$$(\Phi(x))_s = \mathbb{1}_{s \text{ is a substring of } x}.$$

Note that the dimension is exponentially large in m.