

HUMANS ARE FAR EASIER TO HACK THAN ANY COMPUTER

A new phishing wave targets employees with fake HR emails. Some users shared credentials before detection, prompting immediate password resets and stronger MFA policies.

Rising phishing scams use AI-written emails and spoofed domains to trick users. Security teams urge awareness and stricter email authentication to reduce risks.



PYCH DEFENDER

Protection from Social Engineering.

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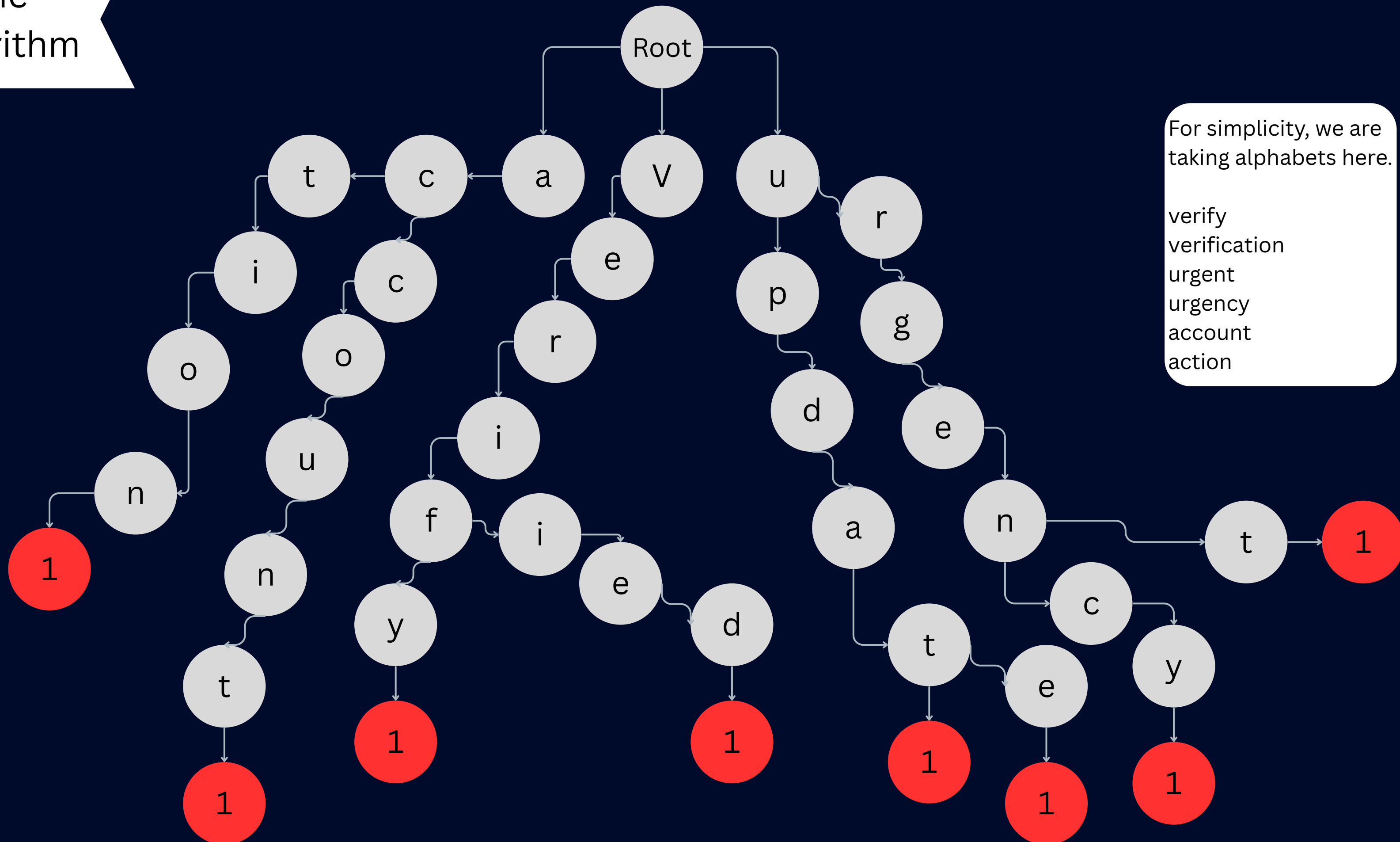
Data Structures:

- Trie (Prefix Tree)
- Hash Map (Array of Structures)
- N-Gram Model (for text segmentation and phrase detection)
- Singly Linked List (for rule storage, Unicode mappings, and suspicious pattern lists)
- Stack (for URL segment parsing and reverse analysis)
- Arrays (for storing flags, counters, and string parsing)
- Wide String (wstring) (for Unicode/multi-language handling)
- 2D Matrix (Dynamic Programming table)
- Graph

Algorithms:

- Aho–Corasick Algorithm (for multi-pattern string matching)
- Sliding Window Algorithm (for N-gram generation)
- Trie-based Pattern Matching and Classification Algorithm (for file extension risk detection)
- Linked List Traversal and Search Algorithm (for rule and pattern lookup)
- Unicode Range Detection Algorithm (for multi-language and homoglyph attack detection)
- String Parsing and Pattern Matching (for link and URL detection using find())
- Statistical Ratio Calculation (for link-to-word ratio analysis)
- Stack-Based URL Analysis Algorithm (push/pop operations for segment-wise inspection)
- Heuristic Scoring Algorithm (assigns risk scores based on detected URL traits)
- Levenshtein distance (measures the minimum number of single-character edits—insertions, deletions, or substitutions—required to change one string into another.)

Trie Algorithm



For simplicity, we are taking alphabets here.

verify
verification
urgent
urgency
account
action

n-grams

Input: It is a limited time offer.
Keywords {limited time, offer}

word= It
prev= It
prev2= It

word= is
prev= It is
prev2= It is

word= a
prev= is a
prev2= It is a

word= limited
prev= a limited
prev2= is a limited

word= time
prev= limited time //Matched (Score)
prev2= a limited time

word= offer //Matched (Score)
prev= time offer
prev2= limited time offer

Levenshtein
distance

		s	e	t	t	i	n	g
	0	1	2	3	4	5	6	7
s	1	0	1	2	3	4	5	6
i	2	1	1	2	3	3	4	5
t	3	2	2	1	2	3	4	5
t	4	3	3	2	1	2	3	4
m	5	4	4	3	2	2	3	4
g	6	5	5	4	3	3	3	3

Further Algorithms may not be represented visually. Their explanation has been done through a report and through code.

Our future implementations would be a screen text analyzer that would help our bot capture on-screen text.

THANK YOU