

## The Master and Margarita by M. Bulgakov

For every method (LUHN, YAKE, and our method) we extracted 302 words. For YAKE and our method the actual number of words is larger; see below. Among those 302 words for each method, human experts selected keywords of the text that are colored green. The selected keywords were counted, red numbers indicate on the running count. LUHN, YAKE and our method identified 56, 55 and 169 keywords, respectively. For our situation those 302 words were divided equally between global and local potential keywords: 151 words for global and 151 words for local. Word counting is indicated in brown.

OUR METHOD. GLOBAL KEYWORDS, STRONG CASES (criterion  $A < 1/5$  in the paper).

'margarita', 'ivan', 'procurator', 'woland', 'cat', 'koroviev', 'master', 'pilate', 'ivanovich', 'azazello', 'guest', 'nikanor', 'styopa', 'varenuvka', 'rimsky', 'barman', 'poet', 'levi', 'nikolaevich', 'yershalaim', 'juda', 'findirector', 'doctor', 'prisoner', 'yeshua', 'annushka', 'homeless', 'yalta', 'road', 'arkady', 'hegemon', 'terrace', 'primus', 'ivans', 'execution', 'veranda', 'archibald', 'praskovya', 'public', 'archibaldovich', 'kiriath', 'counter', 'bengalsky', 'barrabban', 'choirmaster', 'convoy', 'griboedov', 'waiter', 'wail', 'philosopher', 'marble', 'chicken', 'poem', 'statue', 'scorch', 'greenery', 'built', 'immortality'[[53]], 'wonder', 'jazz', 'sway', 'castiron', 'darkhaired', 'testimony', 'beer', 'insult', 'nikolaevichs', 'chin', 'transfer', 'crazy', 'chiton', 'deal', 'bearing', 'impudent', 'married', 'replace', 'fillet', 'stifle', 'lesser', 'admiration', 'exact', 'publish', 'exceedingly', 'rescue', 'rent', 'idiotic', 'sempleyarov', 'fourteenth', 'brighten', 'eve', 'horseman', 'builder', 'route', 'crow', 'advert', 'virgin'[[8]], 'clawed', 'enemy', 'choose', 'share', [100 words] 'rouse', 'squeamishly', 'trial', 'kopeck', 'inflame', 'proper', 'entertain', 'field', 'condescendingly', 'resolve', 'snort', 'cheap', 'bubble', 'ancient', 'delirious', 'shirtfront', 'wore', 'comprehensible', 'unhappy', 'reflection', 'disgust', 'restrain', 'upside', 'dominate', 'equip', 'plant', 'frenzied', 'confidently', 'grieve', 'steadily', 'stern', 'regiment', 'glide', 'coatroom', 'cashier', 'swarm', 'lightly', 'educate', 'energetically', 'thinner', 'accuse', 'decent', 'risk', 'rapidly'

OUR METHOD. GLOBAL KEYWORDS, WEAK CASES (criterion  $1/5 < A < 1/3$  in the paper).

'berlioz', 'professor', 'moon', 'balcony', 'lane', 'girl', 'artiste', 'chairman', 'administrator', 'temple', 'fagott', 'criminal', 'telegram', 'stravinsky', 'nikolai', 'restaurant', 'likhodeev', 'dog', 'currency', 'basement', 'soldier', 'griboedovs', 'apollonovich', 'doorman', 'centurion', 'priest', 'stranger', 'consultant', 'book'[[27]], 'investigator', 'seal', 'citizeness', 'peace', 'rimskys', 'lilac', 'kaifa', 'messenger', 'kanavkin', 'unpleasant', 'authority', 'passport', 'parchment', 'dunchil', 'store', 'bound', 'greek', 'tourist', 'bird', 'boulevard', 'stall', 'kiev', 'execute'[[10]], 'goggle', 'rope', 'banga', 'savelyevich', 'bitterly', 'ivanovichs', 'cancer', 'hallucination', 'proceed', 'physiognomy', 'sandal', 'olive', 'evil', 'danilovich', 'bear', 'false', 'hate', 'hundred', 'accent', 'capital', 'health', 'gathering', 'bunch', 'tribune', 'brightly', 'collar', 'bounce', 'plane', 'rubber', 'suggestion', 'driven', 'liquid', 'mushroom', 'motion', 'swore', 'aramaic'[[13]], 'couple', 'meaning', 'display', 'soar', 'unheardof', 'swamp', 'smear', 'yawn', 'importunate', 'bellow', 'grimace', 'tub', [100 words] 'shelf', 'deprive', 'prison', 'clothing', 'drunken', 'slope', 'rule', 'parquet', 'uneasily', 'match', 'gulp', 'vision', 'assume', 'mug', 'swarthy', 'doze', 'demolish', 'brand', 'croaked', 'unsteady', 'pitifully', 'bulb', 'adroitly', 'retort', 'misunderstand', 'wolf', 'profession', 'jeering', 'intonation', 'potato', 'faust', 'categorically', 'cave', 'relative', 'foresee', 'ledge', 'justice', 'politeness', 'representative', 'wedding', 'contrive', 'grocery', 'cymbal', 'scroll', 'quality', 'capacity', 'deeper', 'electricity', 'nobody', 'sail', 'fingernail', 'horrify', 'extreme', 'weigh', 'ampoule', 'personal', 'departure', 'orange', 'spirit', 'gait', 'benevolently'

OUR METHOD. LOCAL KEYWORDS (criterion  $A > 5$  in the paper).

'aphranus', 'queen', 'riukhin', 'bookkeeper', 'poplavsky', 'broom', 'king', 'maximilian', 'niza', 'andreevich', 'styopas', 'findirectors', 'vassily', 'stepanovich', 'affiliate', 'kuzmin', 'judas', 'department', 'icon', 'gallery', 'sanhedrin', 'horseshoe', 'benzene', 'abaddon', 'steed', 'charm', 'invisible', 'reward', 'bronnaya', 'onstage', 'amvrosy'[[26]], 'muzzle', 'gethsemane', 'pushkino', 'bass', 'annushkas', 'ballroom', 'banknote', 'brunette', 'champagne', 'confectionery', 'pavlovna', 'nail', 'jug', 'sofya', 'waltz', 'dacha', 'govern', 'applause', 'browning', 'salmon', 'froze', 'signature', 'boba'[[10]], 'private', 'ventilation', 'anfisa', 'envelope', 'nikitishna', 'incite', 'foka', 'lodger', 'salesgirl', 'tverskaya', 'destroy', 'stagger', 'antonovna', 'lavrovich', 'detachment', 'burial', 'fading', 'patch', 'gun', 'newcomer', 'stabbed', 'class',

'sale', 'belong', 'pavel', 'xenia', 'funeral', 'frantsevna', 'practical', 'saturday', 'tabouret', 'conduct', 'metropol', 'conductress', 'royal', 'sturgeon', 'natashas', 'frog', 'maple', 'blink', 'cylinder', 'glukharev', 'peek', 'boxoffice', 'snake', 'petrakov', 'unprintable', 'tofana'[[22]], [102 words] 'mandarin', 'drum', 'spouse', 'specimen', 'smolensky', 'turban', 'deposit', 'beggar', 'bosn', 'presentiment', 'ohoh', 'marketplace', 'bloody', 'vagrant', 'ivanushkas', 'platter', 'technique', 'tiger', 'hurricane', 'chart', 'jabbing', 'coliseum', 'bowtie', 'mauser', 'umbrella', 'lick', 'torch', 'bookcase', 'yosifovich', 'vice', 'jacques', 'belomut', 'candelabra', 'valerian', 'deserve', 'dipped', 'freshly', 'narrator', 'shave', 'straighten', 'abashedly', 'halfmile', 'pantelei', 'bosom', 'african', 'negro', 'leech', 'bouret', 'delay', 'candlestick', 'buffet', 'hed', 'dostoevsky', 'spine', 'donna', 'bonfire', 'ladle', 'bloodshot', 'dramlit', 'kindness', 'semidark', 'jetty', 'fuss', 'solovki', 'theory', 'bunk', 'ariman', 'abduct', 'trolleybus', 'footlights', 'allpowerful', 'perelygino', 'tailcoaters', 'oneeighteen', 'safe', 'scope', 'fighter', 'announcer', 'envelop', 'bandage', 'supernatural', 'anger', 'organize', 'quants', 'abuse', 'deniskin', 'enanta', 'torture', 'hopped', 'shame', 'counting', 'goatlegged', 'physician', 'timofei', 'maam', 'casual', 'statement', 'hearse', 'slingshot', 'sham', 'archibaldovichs', 'tenner', 'island', 'barrack', 'snack', 'doorpost', 'smock', 'muddy', 'sterlet', 'gown', 'occasion', 'oyster', 'glory', 'vouch', 'tulip', 'saucer', 'morgue', 'museum', 'bulletproof', 'astride', 'hostess', 'bitch', 'bid', 'ghost', 'dreadful', 'servingwoman', 'cowardice', 'squat', 'gentle', 'beneath', 'divide', 'drei', 'overflow', 'cramped', 'quiver', 'petrakovs', 'unrecognizable', 'skabichevsky', 'inclined', 'suffering', 'cripple', 'machineguns', 'zwei', 'dealer', 'intermission', 'local', 'conviction', 'petal', 'chop', 'liana', 'hurtle', 'hee', 'blissful', 'telegrapher', 'sleepless', 'retire', 'putrid', 'waste', 'bastard', 'vampire', 'indecent', 'unofficial', 'bet', 'grotto', 'declaration', 'pineapple', 'healthy', 'vagankovsky', 'panaev', 'ward', 'copse', 'tumult', 'maestro', 'conceivable', 'curtly', 'superlightning', 'saucepan', 'andreevichs', 'neptune', 'oughtnt', 'boorish', 'cutup', 'gentleman', 'essence', 'gospel', 'numb', 'whisde', 'arrow', 'tropical', 'storyteller', 'sweetie', 'reluctantly', 'horn', 'octopus'

## LUHN

'margarita', 'man', 'eye', 'ivan', 'hand', 'head', 'begin', 'time', 'turn', 'procurator', 'reply', 'ask', 'woland', 'cat', 'koroviev', 'face', 'master', 'voice', 'pilate', 'black', 'thought', 'room', 'cry', 'woman', 'ivanovich', 'window', 'apartment', 'berlioz', 'light', 'left', 'whisper', 'azazello', 'door', 'place', 'open', 'house', 'guest', 'nikanor', 'moscow', 'long', 'white', 'sit', 'city', 'people',

'reason', 'start', 'smile', 'good', 'floor', 'shout', 'table', 'look', 'professor', 'day',  
'foot', 'citizen', 'sat', 'answer', 'moment', 'stood', 'styopa', 'arm', 'flew',  
'varenukha', 'behemoth', 'rimsky', 'great', 'ill', 'fell', 'heard', 'glass', 'happen',  
'night', 'write', 'high', 'appear', 'garden', 'devil', 'barman', 'walk', 'air',  
'understand', 'moon', 'poet'[[21]], 'exclaim', 'god', 'even', 'question', 'step',  
'lie', 'sort', 'call', 'levi', 'life', 'glance', 'raise', 'money', 'speak', 'disappear',  
'longer', 'talk', 'nikolaevich', 'dark', 'cover', 'word', 'wall', 'office', 'foreigner',  
'water', 'leg', 'yershalaim', 'hall', 'messire', 'leave', 'person', 'ear', 'knew',  
'precisely', 'listen', 'visitor', 'case', 'wait', 'street', 'variety', 'heart', 'order',  
'struck', 'rise', 'fly', 'stop', 'come', 'fall', 'sun', 'bed', 'wife', 'morning',  
'balcony', 'set', 'finally', 'lay', 'minute', 'nikolaevna', 'hour', 'point', 'hear',  
'body', 'dress', 'hold', 'change', 'theatre', 'strange', 'girl', 'juda', 'lane', 'short',  
'finger', 'quietly', 'remember', 'wave', 'lady', 'artiste', 'young', 'chairman',  
'stand', 'repeat', 'yesterday', 'paper', 'men', 'pour', 'completely', 'told',  
'findirector', 'explain', 'doctor', 'chair', 'secretary', 'straight', 'dream', 'bad',  
'spoke', 'respond', 'small', 'simply', 'death', 'beg', 'clear', 'felt', 'want',  
'shoulder', 'terrible', 'shoe', 'flash', 'yeshua', 'prisoner', 'natasha', 'homeless',  
'unknown', 'annushka', 'temple', 'river', 'administrator', 'carry', 'hat', 'drop',  
'story', 'afraid', 'telephone', 'broken', 'aphranius'[[21]], 'rush', 'silence', 'visit',  
'stone', 'storm', 'lamp', 'post', 'queen', 'hair', 'bench', 'vanished', 'neck', 'feel',  
'cloak', 'lose', 'fagott', 'interest', 'gaze', 'sky', 'reach', 'criminal', 'silent', 'gate',  
'yalta', 'work', 'conversation', 'hang', 'palace', 'realize', 'seat', 'telegram',  
'riukhin', 'receiver', 'pond', 'year', 'lit', 'cut', 'pontius', 'sound', 'knee', 'ball',  
'police', 'restaurant', 'nikolai', 'stravinsky', 'move', 'pull', 'perfectly', 'laugh',  
'sadvaya', 'return', 'corner', 'magician', 'piece', 'whistle', 'bedroom',  
'darkness', 'moonlight', 'bookkeeper', 'ground', 'gold', 'teeth', 'mouth', 'nice',  
'road', 'hung', 'lead', 'watch', 'naked', 'living', 'green', 'building', 'address',  
'bring', 'brought', 'column', 'hegemon', 'golden', 'kill', 'today', 'dead', 'run',  
'stage', 'arkady', 'chapter', 'fat', 'manage', 'die', 'suffer', 'knife', 'stair',  
'likhodeev'[[14]], 'sleep'

## YAKE

'margarita', 'man', 'eye', 'ivan', 'hand', 'begin', 'turn', 'head', 'reply',  
'procurator', 'time', 'woland', 'cat', 'koroviev', 'pilate', 'master', 'face',  
'ivanovich', 'voice', 'black', 'cry', 'room', 'thought', 'woman', 'nikanor',  
'window', 'apartment', 'berlioz', 'door', 'whisper', 'open', 'azazello', 'light',  
'left', 'house', 'guest', 'place', 'long', 'sit', 'moscow', 'white', 'city', 'people',  
'reason', 'start', 'good', 'smile', 'shout', 'floor', 'table', 'professor', 'day',

'styopa', 'answer', 'sat', 'foot', 'rimsky', 'arm', 'varenukha', 'behemoth',  
'stood', 'flew', 'citizen', 'fell', 'moment', 'great', 'ill', 'glass', 'high', 'night',  
'write', 'heard', 'happen', 'garden', 'nikolaevich', 'devil', 'barman'[[21]],  
'walk', 'exclaim', 'air', 'moon', 'god', 'raise', 'understand', 'poet', 'levi', 'lie',  
'step', 'speak', 'call', 'question', 'glance', 'sort', 'disappear', 'life', 'money',  
'longer', 'dark', 'cover', 'talk', 'word', 'office', 'wall', 'leg', 'messire',  
'yershalaim', 'water', 'nikolaevna', 'foreigner', 'hall', 'ear', 'leave', 'knew',  
'variety', 'person', 'street', 'listen', 'wait', 'visitor', 'case', 'precisely', 'rise',  
'heart', 'order', 'struck', 'fly', 'fall', 'stop', 'bed', 'wife', 'balcony', 'juda', 'sun',  
'morning', 'lay', 'set', 'point', 'finally', 'minute', 'body', 'theatre', 'hour',  
'findirector', 'hear', 'dress', 'change', 'hold', 'lane', 'girl', 'finger', 'young',  
'strange', 'quietly', 'wave', 'men', 'artiste', 'pour', 'remember', 'chairman',  
'short', 'lady', 'ivans', 'repeat', 'yesterday', 'paper', 'stand', 'completely',  
'secretary', 'chair', 'told', 'dream', 'yeshua', 'explain', 'respond', 'doctor',  
'straight', 'spoke', 'small', 'bad', 'death', 'prisoner', 'natasha', 'beg',  
'annushka', 'felt', 'clear', 'flash', 'simply', 'terrible', 'unknown', 'shoe',  
'temple', 'shoulder', 'homeless', 'river', 'administrator', 'hat', 'telephone',  
'aphranus'[[21]], 'afraid', 'story', 'carry', 'drop', 'broken', 'wolands', 'silence',  
'queen', 'storm', 'lamp', 'rush', 'visit', 'stone', 'cloak', 'bench', 'lose', 'pontius',  
'post', 'fagott', 'vanished', 'hair', 'neck', 'silent', 'feel', 'gate', 'nikolai',  
'criminal', 'yalta', 'sky', 'gaze', 'reach', 'interest', 'pond', 'hang', 'seat', 'palace',  
'telegram', 'receiver', 'riukhin', 'realize', 'stravinsky', 'conversation', 'work',  
'cut', 'sound', 'police', 'sadvaya', 'lit', 'ball', 'moonlight', 'year', 'restaurant',  
'perfectly', 'piece', 'knee', 'likhodeev', 'magician', 'arkady', 'laugh', 'pass',  
'return', 'bedroom', 'darkness', 'naked', 'living', 'move', 'bookkeeper',  
'mouth', 'corner', 'whistle', 'teeth', 'pull', 'nice', 'gold', 'road', 'lead', 'watch',  
'hung', 'ground', 'green', 'kill', 'fat', 'address', 'golden', 'dead', 'column',  
'building', 'hegemon'[[13]], 'today', 'run', 'bring', 'stage', 'brought', 'knife',  
'manage', 'sleep', 'chapter', 'die', 'stair', 'investigation', 'suffer', 'desk',  
'tear', [302 words] 'study', 'briefcase', 'inquire', 'dog', 'paw', 'agree', 'burst',  
'huge', 'blood', 'pocket', 'square', 'quiet', 'big', 'dear', 'writer', 'fear', 'dance',  
'true', 'ceremony', 'poplavsky', 'arrest', 'enter', 'currency', 'cap', 'drink', 'box',  
'mirror', 'apollonovich', 'close', 'car', 'send', 'push', 'chest', 'cold', 'rimskys',  
'hard', 'stream', 'foreign', 'leap', 'patriarch', 'sick', 'cloud', 'crack', 'korovievs',  
'free', 'wine', 'entrance', 'hill', 'hella', 'mutter', 'lip', 'catch', 'love',  
'griboedovs', 'excuse', 'secret', 'frighten', 'imagine', 'kitchen', 'mountain',  
'poor', 'number', 'fence', 'receive', 'softly', 'caught', 'remain', 'curtain', 'earth',  
'unexpectedly', 'invite', 'crowd', 'armchair', 'styopas', 'matthew', 'mind',  
'guard', 'checker', 'jumped', 'clinic', 'single', 'burning', 'bow', 'heavy', 'lean',  
'soldier', 'smell', 'basement', 'press', 'meeting', 'grow', 'sign', 'fact', 'offer',

'ala', 'spring', 'coat', 'pale', 'spread', 'cast', 'red', 'burn', 'tramcar', 'horse',  
'land', 'suppose', 'ring', 'business', 'trouser', 'trouble', 'calm', 'met', 'cheek',  
'ance', 'slip', 'surprised', 'live', 'generally', 'terrace', 'card', 'wear', 'kiss', 'cup',  
'primus', 'announce', 'roll', 'decide', 'narrow', 'noise', 'matter', 'ivanovichs',  
'friend', 'tremble', 'late', 'execution', 'centurion', 'priest', 'rang', 'smoke',  
'learn', 'direction', 'stuck', 'suit', 'yellow', 'upset', 'shadow', 'hanozri', 'bald',  
'finish', 'interrupt', 'drew', 'dirty', 'soul', 'touch', 'convince', 'understood',  
'notice', 'drunk', 'doorman', 'farewell', 'flood', 'attention', 'truth', 'sword',  
'candle', 'shake', 'stretch', 'play', 'mysterious', 'mikhail', 'peer', 'picked',  
'impossible', 'dry', 'amazement', 'read', 'stranger', 'attempt', 'cross', 'figure',  
'recognize', 'pool', 'pay', 'continued', 'newspaper', 'thrown', 'confirm', 'blue',  
'instantly', 'roof', 'held', 'bank', 'break', 'veranda', 'star', 'pas', 'alexandrovich',  
'consultant'