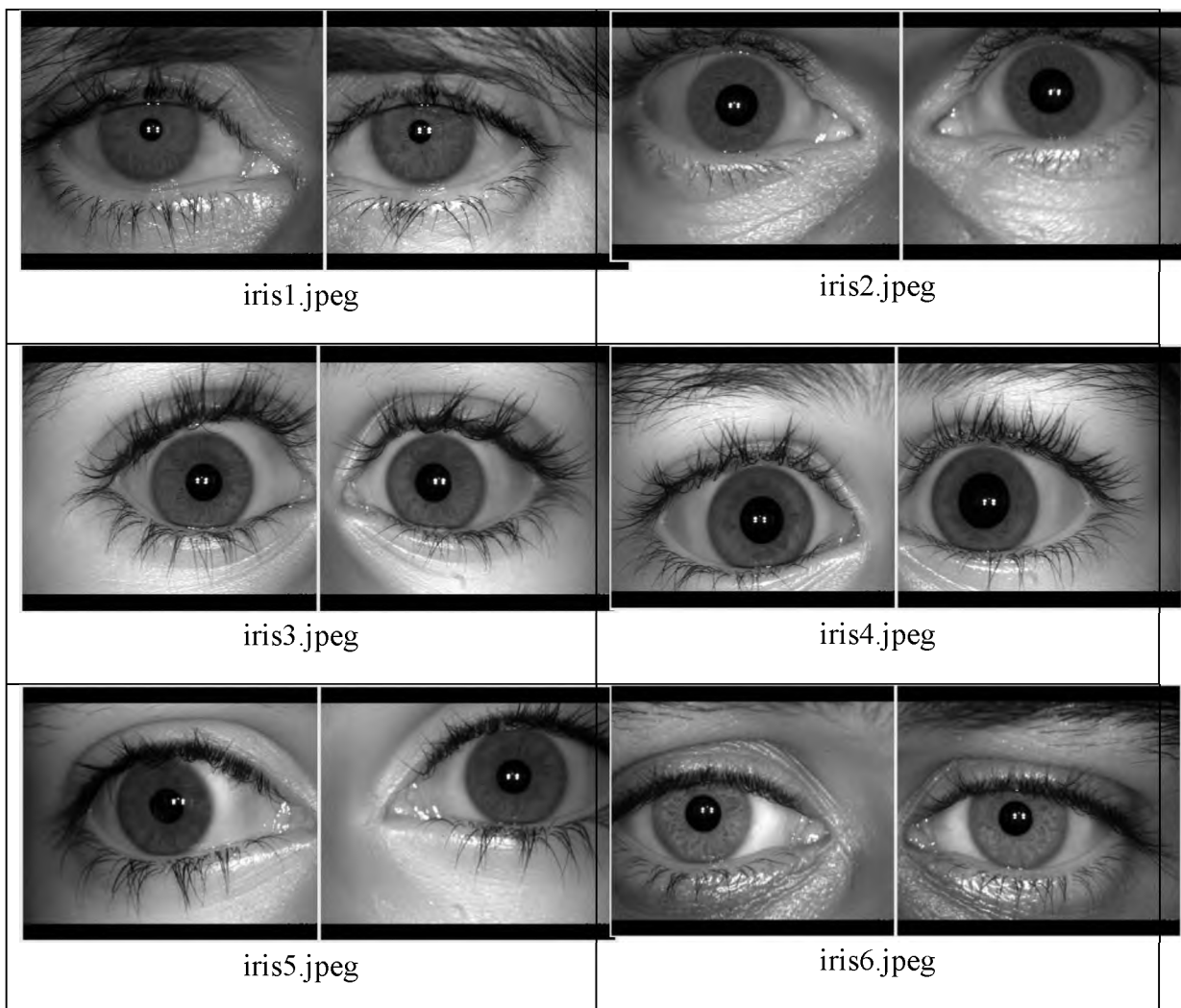


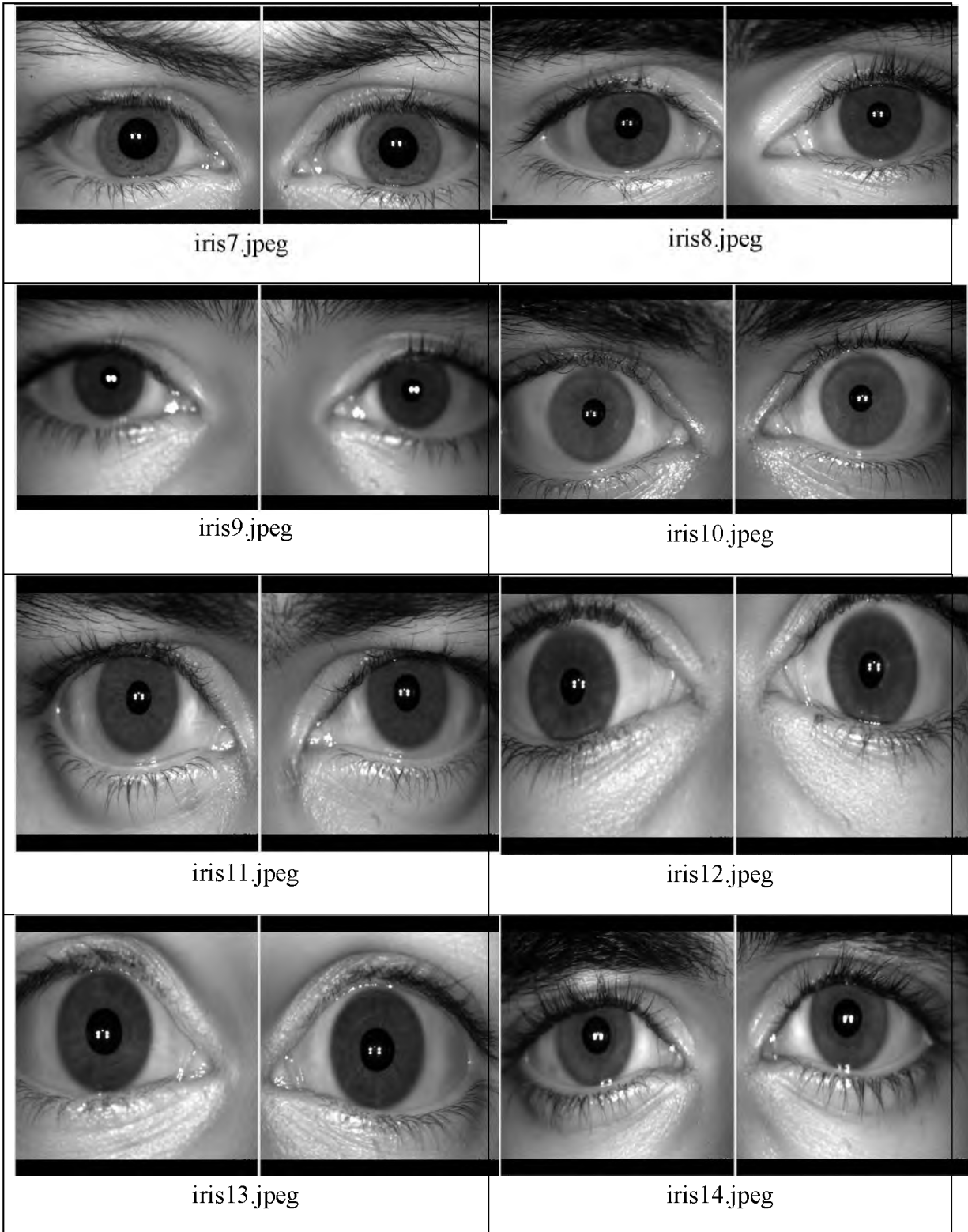


Annexures

ANNEXURE I

Sample Dataset for IRIS database used for Biometric Authentication







iris15.jpeg

iris16.jpeg

ANNEXURE II

Sample Dataset for Malware applications

S.No	APPLICATION NAME	PERMISSIONS
1.	whatsapp	ACCESS_COARSE_LOCATION, ACCESS_FINE_LOCATION, ADD_VOICEMAIL, CALL_PRIVILEGED, CAMERA, AUTHENTICATE_ACCOUNTS, SEND_SMS, USE_CREDENTIALS, BLUETOOTH_PRIVILEGED, WRITE_SETTINGS
2.	hike	ACCESS_COARSE_LOCATION, ACCESS_LOCATION_EXTRA_COMMANDS, READ_CONTACTS, WRITE_CONTACTS, INTERNET, ACCESS_NETWORK_STATE, BIND_ACCESSIBILITY_SERVICE, WAKE_LOCK, SEND_SMS, READ_SMS, WRITE_SMS
3.	viber	ACCESS_NETWORK_STATE, ACCESS_MOCK_LOCATION, RECEIVE_SMS, BLUETOOTH_PRIVILEGED, DELETE_PACKAGES, BIND_DEVICE_ADMIN, CHANGE_CONFIGURATION, WRITE_GSERVICES, WRITE_SETTINGS
4.	line	ACCESS_SURFACE_FLINGER, ACCESS_WIFI_STATE, BROADCAST_SMS, AUTHENTICATE_ACCOUNTS, RECEIVE_SMS, CHANGE_WIFI_STATE, WRITE_SETTINGS, SET_POINTER_SPEED, BROADCAST_SMS, GET_ACCOUNTS, SET_POINTER_SPEED

5.	we chat	ACCOUNT_MANAGER, CALL_PHONE, BIND_ACCESSIBILITY_SERVICE, SET_PROCESS_LIMIT, WRITE_VOICEMAIL, BLUETOOTH_PRIVILEGED, SET_POINTER_SPEED, INJECT_EVENTS, CALL_PHONE, ADD_VOICEMAIL
6.	skype	AUTHENTICATE_ACCOUNTS, BATTERY_STATS, CAMERA, KILL_BACKGROUND_PROCESSES, SET_TIME_ZONE, SET_PROCESS_LIMIT, BROADCAST_SMS, RECEIVE_SMS, BIND_DEVICE_ADMIN
7.	facebook	BIND_ACCESSIBILITY_SERVICE, BIND_APPWIDGET, READ_FRAME_BUFFER, CAPTURE_SECURE_VIDEO_OUTPUT, BROADCAST_SMS, SET_TIME_ZONE, WRITE_VOICEMAIL
8.	twitter	BIND_DEVICE_ADMIN, CHANGE_CONFIGURATION, READ_LOGS, AUTHENTICATE_ACCOUNTS, SET_PROCESS_LIMIT, SET_POINTER_SPEED, HARDWARE_TEST
9.	gmail	BLUETOOTH_PRIVILEGED, CHANGE_WIFI_STATE, REBOOT, SET_TIME_ZONE, BIND_ACCESSIBILITY_SERVICE, WRITE_GSERVICES, SET_PROCESS_LIMIT
10.	snapchat	BROADCAST_SMS, BROADCAST_STICKY, DELETE_CACHE_FILES, CAPTURE_SECURE_VIDEO_OUTPUT, BIND_DEVICE_ADMIN, CHANGE_CONFIGURATION, ACCESS_COARSE_LOCATION, WRITE_HISTORY_BOOKMARKS

11.	flipkart	CALL_PHONE, CALL_PRIVILEGED, DEVICE_POWER, ACCESS_COARSE_LOCATION, ACCESS_SURFACE_FLINGER, USE_CREDENTIALS
12.	ebay	CAMERA, CAPTURE_AUDIO_OUTPUT, SUBSCRIBED_FEEDS_READ, SEND_SMS, ACCOUNT_MANAGER, UNINSTALL_SHORTCUT, DELETE_CACHE_FILES, BIND_DREAM_SERVICE, UNINSTALL_SHORTCUT
13.	quikr	CAPTURE_SECURE_VIDEO_OUTPUT, WRITE_GSERVICES, SEND_SMS, AUTHENTICATE_ACCOUNTS, STATUS_BAR, DEVICE_POWER
14.	Olx	CHANGE_CONFIGURATION, CHANGE_NETWORK_STATE, WRITE_SETTINGS, BIND_ACCESSIBILITY_SERVICE, WRITE_CALL LOG, WRITE_GSERVICES, SEND_SMS, BROADCAST_STICKY
15.	Amazon	CHANGE_WIFI_STATE, CLEAR_APP_CACHE, WRITE_VOICEMAIL, WRITE_HISTORY_BOOKMARKS, BIND_DEVICE_ADMIN, SET_PROCESS_LIMIT, AUTHENTICATE_ACCOUNTS
16.	Jabong	DELETE_CACHE_FILES, DELETE_PACKAGES, WRITE_HISTORY_BOOKMARKS, SET_POINTER_SPEED, CALL_PHONE, BIND_ACCESSIBILITY_SERVICE
17.	snapdeal	DEVICE_POWER, GET_ACCOUNTS, USE_CREDENTIALS, WRITE_HISTORY_BOOKMARKS
18.	Myntra	HARDWARE_TEST, INJECT_EVENTS, WRITE_SETTINGS, SET_TIME_ZONE, GET_ACCOUNTS, USE_CREDENTIALS.

19.	Yebhi	INSTALL_LOCATION_PROVIDER, GET_ACCOUNTS, USE_CREDENTIALS, SET_TIME_ZONE, WRITE_HISTORY_BOOKMARKS
20.	homeshop18	READ_EXTERNAL_STORAGE, ACCESS_COARSE_LOCATION, ACCESS_SURFACE_FLINGER, USE_CREDENTIALS
21.	subway surfer	READ_INPUT_STATE, SEND_SMS, CAPTURE_SECURE_VIDEO_OUTPUT, WRITE_VOICEMAIL, DELETE_CACHE_FILES, READ_FRAME_BUFFER, WRITE_GSERVICES, READ_LOGS
22.	Temple run	READ_SYNC_SETTINGS, ACCESS_COARSE_LOCATION, READ_LOGS, DEVICE_POWER, HARDWARE_TEST, WRITE_HISTORY_BOOKMARKS, ACCESS_FINE_LOCATION, SET_PREFERRED_APPLICATION, CHANGE_WIFI_STATE, REBOOT
23.	angrybirds	RECEIVE_SMS, SEND_SMS, SET_TIME, CHANGE_CONFIGURATION, AUTHENTICATE_ACCOUNTS
24.	flappy bird	SET_POINTER_SPEED, SET_PROCESS_LIMIT, BIND_ACCESSIBILITY_SERVICE, ACCESS_COARSE_LOCATION, CHANGE_WIFI_STATE, SET_PREFERRED_APPLICATIONS
25.	candy crush	SET_PROCESS_LIMIT, SYSTEM_ALERT_WINDOW, SEND_SMS, SET_POINTER_SPEED, BIND_DEVICE_ADMIN, SET_PROCESS_LIMIT,

		CAPTURE_SECURE_VIDEO_OUTPUT
26.	red stone	SET_TIME_ZONE, WRITE_GSERVICES, SEND_SMS, WRITE_HISTORY_BOOKMARKS, BLUETOOTH_PRIVILEGED
27.	gem miner	SUBSCRIBED_FEEDS_READ, WRITE_SETTINGS, SYSTEM_ALERT_WINDOW, CAPTURE_SECURE_VIDEO_OUTPUT, SEND_SMS, BROADCAST_SMS
28.	bubble shot	WRITE_GSERVICES, CALL_PHONE, WRITE_VOICEMAIL, AUTHENTICATE_ACCOUNTS, CHANGE_CONFIGURATION, ACCESS_SURFACE_FLINGER, WRITE_HISTORY_BOOKMARKS
29.	jewels	WRITE_SETTINGS, WRITE_SMS, ACCOUNT_MANAGER, WRITE_HISTORY_BOOKMARKS, BIND_ACCESSIBILITY_SERVICE, CHANGE_WIFI_STATE
30.	sudoko	WRITE_VOICEMAIL, DELETE_PACKAGES, BIND_DEVICE_ADMIN, USE_CREDENTIALS, CAPTURE_SECURE_VIDEO_OUTPUT, AUTHENTICATE_ACCOUNTS
31.	mario	HARDWARE_TEST, CHANGE_CONFIGURATION, ACCESS_COARSE_LOCATION WRITE_HISTORY_BOOKMARKS, WRITE_SETTINGS, UNINSTALL_SHORTCUT BIND_ACCESSIBILITY_SERVICE

32.	bike race	WRITE_GSERVICES, BIND_DEVICE_ADMIN, STATUS_BAR, CHANGE_WIFI_STATE, SEND_SMS, WRITE_VOICEMAIL, USE_CREDENTIALS
33.	car race	ACCESS_COARSE_LOCATION, BLUETOOTH_PRIVILEGED, WRITE_CALL LOG, SET_PROCESS_LIMIT, UNINSTALL_SHORTCUT, DELETE_CACHE_FILES
34.	crazy taxi	SEND_SMS, WRITE_GSERVICES, DEVICE_POWER, BROADCAST_SMS CAPTURE_SECURE_VIDEO_OUTPUT, STATUS_BAR.
35.	bigshot	SET_PROCESS_LIMIT, AUTHENTICATE_ACCOUNTS, WRITE_CALL LOG, WRITE_HISTORY_BOOKMARKS, BLUETOOTH_PRIVILEGED
36.	death rally	CAPTURE_SECURE_VIDEO_OUTPUT, ACCESS_COARSE_LOCATION, BIND_ACCESSIBILITY_SERVICE, BLUETOOTH_PRIVILEGED, SEND_SMS, WRITE_CALL LOG, WRITE_HISTORY_BOOKMARKS
37.	Talking tom	SEND_SMS, BIND_DEVICE_ADMIN, AUTHENTICATE_ACCOUNTS, CALL_PHONE, BROADCAST_SMS, CHANGE_WIFI_STATE, ACCESS_COARSE_LOCATION
38.	rapis toss	SEND_SMS, DELETE_CACHE_FILES, CALL_PHONE, BLUETOOTH_PRIVILEGED, CAPTURE_SECURE_VIDEO_OUTPUT, BIND_ACCESSIBILITY_SERVICE
39.	goal tracker	ACCESS_COARSE_LOCATION, SEND_SMS, BIND_DEVICE_ADMIN, CAPTURE_SECURE_VIDEO_OUTPUT, CAMERA

40.	basket ball toss	SEND_SMS, WRITE_HISTORY_BOOKMARKS, USE_CREDENTIALS, HARDWARE_TEST, CAPTURE_SECURE_VIDEO_OUTPUT, BLUETOOTH_PRIVILEGED
41.	app lock	SEND_SMS, WRITE_HISTORY_BOOKMARKS, CHANGE_WIFI_STATE, CHANGE_CONFIGURATION, INSTALL_LOCATION_PROVIDER, UNINSTALL_SHORTCUT, SET_PROCESS_LIMIT
42.	dictionary	SEND_SMS, WRITE_HISTORY_BOOKMARKS, STATUS_BAR, UNINSTALL_SHORTCUT, CHANGE_WIFI_STATE, ACCESS_COARSE_LOCATION
43.	uc browser	SEND_SMS, SET_POINTER_SPEED, USE_CREDENTIALS, STATUS_BAR, DELETE_CACHE_FILES, DEVICE_POWER, UNINSTALL_SHORTCUT
44.	opera mini	SEND_SMS, STATUS_BAR, AUTHENTICATE_ACCOUNTS, DEVICE_POWER, SET_PROCESS_LIMIT, WRITE_CALL LOG, UNINSTALL_SHORTCUT, READ_LOGS
45.	true caller	SET_PROCESS_LIMIT, REBOOT, STATUS_BAR, AUTHENTICATE_ACCOUNTS, SET_TIME_ZONE, RECEIVE_SMS, BIND_ACCESSIBILITY_SERVICE, WRITE_CALL LOG
46.	google chrome	SEND_SMS, BIND_ACCESSIBILITY_SERVICE, RECEIVE_SMS, BIND_DEVICE_ADMIN, SET_PROCESS_LIMIT, SET_POINTER_SPEED, AUTHENTICATE_ACCOUNTS
47.	go launcher	ACCESS_COARSE_LOCATION , SET_PROCESS_LIMIT, SEND_SMS, BLUETOOTH_PRIVILEGED,

		SET_POINTER_SPEED, BIND_ACCESSIBILITY_SERVICE
48.	nova launcher	SEND_SMS , AUTHENTICATE_ACCOUNTS, BIND_DEVICE_ADMIN, SET_PROCESS_LIMIT, CHANGE_CONFIGURATION, ACCESS_COARSE_LOCATION
49.	flash transfer	SEND_SMS , WRITE_HISTORY_BOOKMARKS, STATUS_BAR, BIND_DEVICE_ADMIN, CHANGE_CONFIGURATION, CHANGE_WIFI_STATE
50.	battery doctor	CAPTURE_SECURE_VIDEO_OUTPUT, SET_PROCESS_LIMIT, CHANGE_WIFI_STATE, BIND_DEVICE_ADMIN, SET_TIME_ZONE SYSTEM_ALERT_WINDOW, BLUETOOTH_PRIVILEGED

ANNEXURE III

Sample Dataset for Encryption Files

aes.txt, one.txt, two.txt, five.txt, fifteen.txt, rsa.txt, sam.txt, ten.txt, timings.txt, o.txt, config.txt, ABCD.txt, Adder.txt, BARTEE.txt, biometric.txt, camera.txt, changelog.txt, crypto.txt, common.txt, config.txt, contacts.txt, recipients.txt, sender.txt, Decode.txt, Disclaimer.txt, encode.txt, errors.txt, eula.txt, four.txt, help.txt, install.txt, iris.txt, face.txt, sign.txt, installation.txt, john.txt, java.txt, jscript.txt, jvm.txt, jk.txt, key.txt, three.txt, Korean.txt, license.txt, links.txt, log.txt, message1.txt, mess.txt, digest.txt, math.txt, message.txt, main.txt, multi.txt, notes.txt, noise.txt, nets.txt, open.txt, oscillation.txt, odd1.txt, ordinary.txt, adder1.txt, seven.txt, oral.txt, print1.txt, patents.txt, procedure.txt, proj1.txt, proj2.txt, crypt1.txt, cryptaes.txt, readme.txt, ripple.txt, rsa-encrypt.txt, encrypt.txt, decrypt.txt, uploading.txt, downloading.txt, upper.txt, serial.txt, shift.txt, register.txt, system.txt, sys.txt, sync.txt, trademarks.txt, textfile.txt, torrent.txt, traditional.txt, terminal.txt, roman.txt, related.txt, test.txt, torch.txt, uninstall.txt, version.txt, winxp.txt, vee.txt, wiki.txt, version3.txt, version4.txt, version5.txt, malware.txt, virus.txt, worm.txt, myfile.txt, sms.txt, surf.txt, choice.txt, surround.txt, systemreg.txt, status.txt, synchronous.txt, update.txt, terra.txt, it.txt, iot.txt, subway.txt, temp.txt, pgp.txt, variable.txt, vast.txt, various.txt, radio.txt, radius.txt, whatsappmedia.txt, hike.txt, elliptic.txt, symmetric.txt, hash.txt, hybrid.txt, aesrsa.txt, aesecc.txt, des.txt, messagedig.txt, cloud.txt, phase.txt, file.txt, fuzzy.txt, keywords.txt, plaintext.txt, plain1.txt, plain2.txt, plain3.txt, search.txt, source.txt.

iris1.jpeg, photo.jpeg, facebook.jpeg, whats.jpeg, DSC0001.jpeg, DSC0002.jpeg,
DSC0003.jpeg, DSC0004.jpeg, DSC0005.jpeg, DSC0006.jpeg, DSC0007.jpeg,
DSC0008.jpeg, DSC0009.jpeg, DSC0010.jpeg, DSC0011.jpeg, DSC0012.jpeg,
DSC0013.jpeg, DSC0014.jpeg, DSC0015.jpeg, DSC0016.jpeg, DSC0017.jpeg,
DSC0018.jpeg, DSC0019.jpeg, DSC0020.jpeg, DSC0021.jpeg, DSC0022.jpeg,
DSC0023.jpeg, DSC0024.jpeg, DSC0025.jpeg, DSC0026.jpeg, DSC0027.jpeg,
DSC0028.jpeg, IMG201601.jpeg, IMG201602.jpeg, IMG201603.jpeg, IMG201604.jpeg,
IMG201605.jpeg, IMG201606.jpeg, IMG201607.jpeg, IMG201608.jpeg, IMG201609.jpeg,
IMG201610.jpeg, IMG201611.jpeg, IMG201612.jpeg, IMG201613.jpeg, IMG201614.jpeg,
IMG201615.jpeg.

ANNEXURE IV

Sample Dataset for Keyword Search in RFMKS

Entertainment files

Hello, chatmessage, fuzzy search, camera, photo, digital, image, lens, photography, art, slr, wedding, film, video, bluray, dvdrip, cctv, stereo, mono, audio, wavefile, radio, headline, news, channel, entertainment, Nikon, canon, sony.

Contact files

Name, number, log, display, clear, delete, call, missed call, import, export, accounts, settings, add contact, family, sms, bulk sms, groups, friends list, mms, friends, coworkers, frequent contact, all contacts, speed dial, favorites, block.

Location files

Map, trace, operator, address, city, GSM, provider, earth, traffic, bicycle, terrain, transit, direction, starting point, destination, walking, flights, driving, home, work, street view, imagery, tilt view, zoom in, zoom off.

Calendar files

Calendar, days, week, month, search, events, remainder, schedule, birthdays, holidays, settings, goal, refresh, January, February, march, april, may, june, july, august, September, October, November, December, leap year.

Social Network files

Facebook, whatsapp, twitter, snapchat, imo, skype, messenger, Hangout, gmail, truecaller, telegram, groupme, line, kakao talk, kik, tango, linkedin, cubie, hike, BBM, viber, nimbuzz, chaton, voxer, rocketalk, youtube, googleplus, yahoo messenger, imdb, GitHub, Periscope, Doximity, AIM, LiveProfile, Beluga, Convore, google latitude, foursquare, atzip, waze, Fiddme, vine, reddit, quora, dribbble, Loopt, Instagram, flickr, socialcam, photo trader, dream stream, liveshare, phototreats, postage, songmate.



Publications

International Journals: 6

1. M.Sujithra, Dr.G. Padmavathi “*An Improved PCA based Zero Crossing Feature Extraction for Real- Time Biometric Iris Authentication in low Power Resource Constrained Mobile Devices*”, International Journal of Applied Engineering Research, ISSN 0973-4562 Volume 10, Number 8 (2015) pp. 20351-20369 **Scopus Indexed**
2. M.Sujithra, Dr. G. Padmavathi,” *Mobile Device Security-A survey on Mobile Device Threats, Vulnerabilities and their Defensive Mechanism*”, International Journal of Computer Applications(IJCA) Volume 56 – Number 14, October 2012, ISBN: 973-93-80870-99-5, Impact Factor:0.814. **Cited by 14**
3. M.Sujithra, Dr.G. Padmavathi “*Biometric System Penetration in Resource Constrained Mobile Device*”, International Journal on Bioinformatics & Biosciences. Vol.3, No.1, March 2013 DOI: 10.5121/ijbb.2013.3104 35.
4. M.Sujithra, Dr.G. Padmavathi,” *A Survey of Biometric Iris Recognition: Security, Techniques & Metrics*”, Asian Journal of Information Technology,14:192-199 **Scopus Indexed**
5. M.Sujithra, Dr.G.Padmavathi,” *Enhanced Permission Base Malware Detection in Mobile Device Using Optimized Random Forest classifier with PSO – GA*”, Research Journal of Applied Sciences, Engineering and Technology, **Scopus Indexed**
6. M.Sujithra, Dr.G.Padmavathi,” *Efficient Hybrid MAES Encryption Algorithm for Mobile Device Data Security at Rest in Cloud Environment*”, Journal of Information Technology and Sciences Volume 2 Issue 1, 2016.

International Conference Proceedings: 4

1. M.Sujithra, Dr. G.Padmavathi,” *Next Generation Biometric Security System - An approach for Mobile Device Security*”, The Second International Conference on Computational Science, Engineering and Information Technology(CCSEIT 2012), volume 1 , **ACM** ,October 2012.. **Cited by 8.**
2. M.Sujithra, Dr.G.Padmavathi, S.Sathyanarayanan “*Mobile Device Data Security: A Cryptographic Approach by Outsourcing Mobile data to Cloud* “, **Elsevier**, Procedia Computer Science 47 (2015) 480 – 485. **Cited by 4.**
3. M.Sujithra, Dr. G.Padmavathi, “*Biometrics for Low Power Mobile Devices*”, International Conference on Mathematical Modelling and Applied Soft Computing (MMASC 2012) (Towards high performance and knowledge optimization) June 11-13, 2012. Volume 2, pp1016.
4. M.Sujithra, Dr.G.Padmavathi, S.Sathyanarayanan ,” *A Survey on Mobile Application Development using Android OS*”,IEEE - International Conference on Research and Development Prospects on Engineering and Technology (ICRDPET-2013)” Volume 4 ISBN 978-1-4673-4948-2,**IEEE** , March 2013



Profile of Doctoral Committee member

DR. V.S. Shankar Sriram

Dr. V.S. Shankar Sriram joined the Department of Information Technology at the Sastra University, Thanjavur in 2011. He completed his Master of Engineering Degree in Software Engineering from Thapar Institute of Engineering and Technology, Patiala, India. His Ph.D., is from Birla Institute of Technology, Mesra. Dr. V.S. Shankar Sriram has published papers in international journals and at conferences where he has won several Best Paper Awards. In addition to teaching, he also serves as In-charge IT-Services in the Department of Information Technology, Sastra University. He is currently guiding M. Tech. and Ph. D. research scholars. His areas of research include Network Security, Cryptography and Cloud Computing.

Profile of the Candidate

M.Sujithra

M.Sujithra is pursuing her Ph. D at Avinashilingam Institute for Home Science and Higher Education for Women, University, Coimbatore. She has 13 years of teaching experience. She is also working as Assistant Professor in the Department of Computing, Coimbatore Institute of Technology, Coimbatore. She completed her B.Sc. (Computer Science), Master of Computer Applications and M.Phil. from Bharathiar University, Coimbatore. Her areas of interest include Mobile Device Security, Image Processing, Information Security and Cloud Computing. She has 15 publications in her research area.