

2021 3rd Novel Intelligent and Leading Emerging Sciences Conference (NILES 2021)

**Giza, Egypt
23 – 25 October 2021**



**IEEE Catalog Number: CFP21V11-POD
ISBN: 978-1-6654-2158-4**

**Copyright © 2021 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP21V11-POD
ISBN (Print-On-Demand):	978-1-6654-2158-4
ISBN (Online):	978-1-6654-2157-7

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

DIELECTROPHORETIC BASED MICROFLUIDIC FOR NANOPARTICLES “VIRUSES” SEPARATION	1
<i>Hamdy Abdelhamid; Ibrahim Khalaf; Ahmed Hussien; Reda Abdelbaset</i>	
A NOVEL EXOSKELETON FINGER MECHANISM FOR ROBOTIC APPLICATIONS	5
<i>Mahmoud Raslan; A. Abdellatif; Mostafa R. A. Atia</i>	
AN E-HEALTH SYSTEM FOR ENCRYPTING BIOSIGNALS USING TRIPLE-DES AND HASH FUNCTION	11
<i>Mona M. Elamir; Mai S. Mabrouk; Walid I. Al-Atabany</i>	
HIGH PERFORMANCE MACHINE LEARNING MODELS FOR FUNCTIONAL VERIFICATION OF HARDWARE DESIGNS	15
<i>Khaled A. Ismail; Mohamed A. Abd El Ghany</i>	
VISION-BASED COMMUNICATION SYSTEM FOR PATIENTS WITH AMYOTROPHIC LATERAL SCLEROSIS	19
<i>Neven Saleh; Aya Tarek</i>	
PRODUCTION OF SINGLE-USE TABLEWARE PRODUCTS FROM BAGASSE	23
<i>Sherifa Elhady; Irene Samy Fahim</i>	
ENHANCEMENT OF SPECTRAL AND ENERGY EFFICIENCIES OF MU-MASSIVE MIMO SYSTEMS EMPLOYING ONE-BIT A/Ds AT MILLIMETER WAVES	27
<i>Samar I. Farghaly; Hussein E. Seleem; Amr H. Hussein; Mustafa M. Abdelnaby</i>	
AN EFFICIENT MICROCONTROLLER FOR VISUAL CORTICAL PROSTHESIS	32
<i>Nabeel Fattah</i>	
EFFECT OF BAR MATERIAL ON THE BIOMECHANICAL PERFORMANCE OF HYBRID DENTAL PROSTHESIS	37
<i>Yomna H. Shash; Mohamed M. Dohiem; Mohamed T. Elwakad; Mohamed A. A. Eldosoky</i>	
REAL-TIME FISH DETECTION APPROACH ON SELF-BUILT DATASET BASED ON YOLOV3	41
<i>Ali Amin; Salmeen Bahnasy; K. Elghamry; A. Samir; A. Emad; M. Saeed Darweesh; Amr A. El-Sherif</i>	
MULTI-CRITERIA DECISION MAKING APPROACHES FOR FACILITIES PLANNING PROBLEM	47
<i>Ahmed M. El-Araby; Ibrahim Sabry; Ahmed El-Assal</i>	
REDUCED ACTIVE ELEMENT POWER-LAW PROPORTIONAL-INTEGRAL CONTROLLER DESIGNS	51
<i>Stavroula Kapoulea; Costas Psychalinos; Ahmed S. Elwakil</i>	
REGRESSION MODELING FOR THE VENTILATION EFFECT ON COVID-19 SPREADING IN METRO WAGONS	55
<i>Mostafa El-Salamony; Ahmed Moharam; Amr Guaily</i>	
EXTENDED HYBRID STATISTICAL TOOLS ANFIS- GA TO OPTIMIZE UNDERWATER FRICTION STIR WELDING PROCESS PARAMETERS FOR ULTIMATE TENSILE STRENGTH AMELIORATION	59
<i>Ibrahim Sabry Given Name; Noah E. El-Zathry; F. T. El-Bahrawy Given; M. Abdel Ghaffar</i>	
OPTIMAL POWER CONSUMPTION ON DISTRIBUTED EDGE SERVICES UNDER NON-UNIFORM TRAFFIC WITH DUAL THRESHOLD SLEEP/ACTIVE CONTROL	63
<i>Amira A. Amer; Ihab E. Talkhan; Tawfik Ismail</i>	
CURRENT-MODE MULTIPLIER ACCUMULATOR DESIGN USING A MEMRISTOR-TRANSISTOR CROSSBAR ARCHITECTURE	67
<i>Amr Mohammedan; Mohamed Ghoneim; Rana Hesham; Ahmed Soltan</i>	
INVESTIGATION OF DIFFERENTIALLY EXPRESSED GENE RELATED TO HUNTINGTON'S DISEASE USING GENETIC ALGORITHM	71
<i>Maha S. Mohamed; Walid Al-Atabany; Vidan F. Ghoneim</i>	
CHAOS-BASED RNG USING SEMICONDUCTOR LASERS WITH PARAMETERS VARIATION TOLERANCE	75
<i>Sara Ahmed; Nancy Alshaer; Tawfik Ismail</i>	
ROBUST BACKGROUND TEMPLATE FOR SALIENCY DETECTION	79
<i>Abram W. Makram; Nancy M. Salem; Mohamed T. El-Wakad; Walid Al-Atabany</i>	
DETECTION OF COVID-19 USING GENOMIC IMAGE PROCESSING TECHNIQUES	83
<i>Muhammed S. Hammad; Vidan F. Ghoneim; Mai S. Mabrouk</i>	

OPTIMIZING COMBINATIONAL LOGIC CIRCUITS USING GRAMMATICAL EVOLUTION	87
<i>Ayman Youssef; Bilal Majeed; Conor Ryan</i>	
STUDYING GENES RELATED TO THE SURVIVAL RATE OF PEDIATRIC SEPTIC SHOCK	93
<i>Rana Hossam Elden; Vidan Fathi Ghoneim; Marwa M. A. Hadhoud; Walid Al-Atabany</i>	
NUMERICAL CORRECTIONS TO ESTIMATE DEPLETION REGION WIDTH IN PSEUDO-TWO-DIMENSIONAL MODEL OF DOUBLE-GATE TUNNELING FET	97
<i>Muhammad Elgamal; Ahmed Shaker</i>	
COST VERSUS RELIABILITY STUDY FOR STAND-ALONE PV SYSTEMS IN TROPICAL CLIMATES	103
<i>Nada M. Abdelaleem; Wagdy R. Anis</i>	
COMPARISON STUDY OF FLOW DIVERTING STENTS FOR THE TREATMENT OF A PATIENT-SPECIFIC ABDOMINAL AORTIC ANEURYSM	109
<i>Ayat Nada; Mohammed A. Hassan; Mahmoud A. Fakhir; Mohamed Tarek I. El-Wakad</i>	
ONLINE CONSTRAINTS UPDATE USING MACHINE LEARNING FOR ACCELERATING HARDWARE VERIFICATION	113
<i>Mostafa Aboelmageed; Maggie Mashaly; Mohamed A. Abd El Ghany</i>	
GENERAL TRANS-COMPILER BASED MOBILE APPLICATIONS CONVERTER.....	117
<i>Nourhan M. Shaban; Ahmed H. Yousef; Hoda K. Mohamed</i>	
ENHANCING IMAGE-BASED MALWARE CLASSIFICATION USING SEMI-SUPERVISED LEARNING.....	125
<i>Salma Abdelmonem; Shahd Seddik; Rania El-Sayed; Ahmed S. Kaseb</i>	
SENTIMENT ANALYSIS USING MACHINE LEARNING AND DEEP LEARNING MODELS ON MOVIES REVIEWS	129
<i>Yomna Eid Rizk; Walaa Medhat Asal</i>	
THE FLUORESCENT EFFECT OF CHITOSAN MAGNETITIC NANOPARTICLES FOR NEAR-INFRARED IMAGING.....	133
<i>Hala S. Abuelmakarem; Wafaa A. Ahmed; Dina Mofed; Mohammed Wael; Sherif A. Sami</i>	
MODE CHARACTERIZATION OF RING CORE FIBERS FOR SDM TRANSMISSION	137
<i>Marwa Ahmed; Hussein Seleem; Mahmoud A. Attia</i>	
LID-DRIVEN CAVITY FLOW WITH ELLIPTIC OBSTACLE AT DIFFERENT ORIENTATIONS	143
<i>Yusuf T. Elbadry; Ahmed A. Hamada; Mohammed A. Boraey; Mohamed M. Abdelrahman</i>	
PRECISE ORIENTATION ESTIMATION BASED ON NONLINEAR MODELING AND QUATERNION TRANSFORMATIONS FOR LOW COST NAVIGATION SYSTEMS	147
<i>Mohamed S. Elsabbagh; Ahmed H. Hassaballa; Ahmed M. Kamel; Yehia Z. Elhalwagy</i>	
DESIGN OF A HIGHLY-EFFICIENT EMBEDDED CONTROLLER FOR AUV STABILIZATION AND TRAJECTORY TRACKING USING MINIMAL COMPUTATIONAL RESOURCES	155
<i>Samer A. Mohamed; Omar K. Abdelgelil; Osama A. Elhout; Hend M. Aafia; Mohammed I. Awad; Hossam E. Abd El Munim</i>	
THE EFFECT OF DIFFERENT DESIGN AND OPERATIONAL PARAMETERS ON THE PERFORMANCE OF CAN-TYPE COMBUSTORS.....	161
<i>Mohammed A. Boraey; Gamal Abdel Kareem; Hesham Abdel Hameed; Hafez El Salmawy</i>	
INSTANCE SEGMENTATION OF 2D LABEL-FREE MICROSCOPIC IMAGES USING DEEP LEARNING.....	165
<i>Basma A. Mohamed; Lamees N. Mahmoud; Walid Al-Atabany; Nancy M. Salem</i>	
GSK-RL: ADAPTIVE GAINING-SHARING KNOWLEDGE ALGORITHM USING REINFORCEMENT LEARNING	169
<i>Hazem A. A. Nomer; Ali Wagdy Mohamed; Ahmed H. Yousef</i>	
OPTIMIZATION STUDY OF UNSTEADY FLOW AFFECTING ON COOLING A HEATED CYLINDER.....	175
<i>Mostafa El-Salamony; Mohamed Aziz; Ernesto Benini; Osama Gaheen</i>	
GENERATION OF THE CHAOTIC KEYS ON THE FLY FOR AES ENCRYPTION SYSTEM.....	179
<i>Haitham A. Mohamed; Ahmed H. Madian; Ahmed A. Abdel-Hafez; W. Anis</i>	
LBCS NAVIGATION CONTROLLERS OF TWINING LAGRANGIAN SWARM INDIVIDUALS	183
<i>Ronal P. Chand; Sandeep A. Kumar; Ravinesh Chand</i>	
NAVIGATION OF AN N-LINK REVOLUTE ROBOTIC ARM VIA HIERARCHAL LANDMARKS	188
<i>Ravinesh Chand; Sandeep A. Kumar; Ronal P. Chand</i>	
DESIGN AND ANALYSIS OF A RELIABLE QUADCOPTER UAV FOR WIRELESS COMMUNICATION PURPOSES	193
<i>Nourhan Elmeseiry; Abdullah I. Salama; Nancy Alshaer; Tawfik Ismail</i>	
INVESTIGATION OF ROOT CAUSES OF ORDER UNFULFILLMENT: A LOGISTICS CASE STUDY.....	199
<i>Mariam Khaled; Alyaa Hisham; Irene S. Fahim</i>	

A PREPROCESSING APPROACH TO IMPROVE THE PERFORMANCE OF INCEPTION V3-BASED FACE SHAPE CLASSIFICATION	205
<i>Michael Nabil; Mohamed Rady; Kareem Moussa; Mahmoud Wessam; Mohamed Hossam; Retaj Yousri; M. Saeed Darweesh</i>	
OBSTACLE AVOIDANCE OF A POINT-MASS ROBOT USING FEEDFORWARD NEURAL NETWORK	210
<i>Kaylash Chaudhary; Goel Lal; Avinesh Prasad; Vishal Chand; Sushita Sharma; Avinesh Lal</i>	
INTELLIGENT ARABIC-BASED HEALTHCARE ASSISTANT	216
<i>Tasneem Wael; Ahmed Hesham; Mohamed Youssef; Omar Adel; Hamis Hesham; M. Saeed Darweesh</i>	
FACILITY LAYOUT AND SUPPLY CHAIN MANAGEMENT OF FOOD SERVICE INDUSTRIES: A CASE STUDY	222
<i>Muhammad A. Abdelaziz; Toka S. Mohamed; Yosra I. Salama; Ahmed Mohib; Sally Kassem</i>	
A SCALABLE FIRMWARE-OVER-THE-AIR ARCHITECTURE SUITABLE FOR INDUSTRIAL IOT APPLICATIONS	228
<i>Ahmed I. Ahmed; Eslam I. Shahin; Lobna A. Said; Ahmed H. Madian</i>	
VISUALIZATION OF RETINAL ANATOMICAL STRUCTURE USING COMPUTER-GENERATED HOLOGRAPHY	232
<i>Rania M. Abdelazeem; Doaa Youssef; Salah Hassab-Elnaby; Mostafa Agour</i>	
DESIGN AND ANALYSIS OF A DYNAMIC NECK BRACE	236
<i>Mostafa El-Hussien Ibrahim; Mostafa Saied El- Mohandes; Mohamed Tarek El-Wakad; Sherif A. Sami</i>	
DATA MINING STUDENTS' PERFORMANCE IN A HIGHER LEARNING ENVIRONMENT	241
<i>Ravneil Nand; Ashneel Chand; Emmenual Reddy</i>	
SUPPLY CHAIN RISK ASSESSMENT USING FUZZY LOGIC	246
<i>Abdelrahman Ibrahim Mostafa; Abdelrahman Mostafa Rashed; Yasmin Ashraf Alsharif; Yomna Nagah Enien; Menatalla Kaoud; Ahmed Mohib</i>	
DRIVER-IN-THE-LOOP FOR COMPUTER-VISION BASED ADAS TESTING	252
<i>Nada S. Kassem; Ahmed M. Masoud; Amgad M. Bayoumy Aly</i>	
OPTIMIZED PRELIMINARY DESIGN OF A MULTISTAGE LOW-SPEED AXIAL FLOW COMPRESSOR	257
<i>Abdelrahman Ahmed Kamal; Alyaa Abdelnaby Thabet; Mohamed M. A. Elnabawy</i>	
DOUBLE FRACTIONAL-ORDER MASKS IMAGE ENHANCEMENT	261
<i>Alaa Abdalrahman; Samar M. Ismail; Lobna A. Said; Ahmed G. Radwan</i>	
ACTIVE MORPHING CONTROL OF AIRFOIL AT LOW REYNOLDS NUMBER USING LEVEL-SET METHOD	265
<i>Yusuf T. Elbadry; Amr Gamal Guaily; Mohammed A. Boraey; Mohamed M. Abdelrahman</i>	
BRAIN TUMOR SEGMENTATION USING 3D U-NET WITH HYPERPARAMETER OPTIMIZATION	269
<i>Ali Gamal; Khaled Bedda; Nada Ashraf; Salma Ayman; Mohamed Abdallah; Muhammad A. Rushdi</i>	
BENCHMARKING OF ANTIMICROBIAL RESISTANCE GENE DETECTION TOOLS IN ASSEMBLED BACTERIAL WHOLE GENOMES	273
<i>Eman Abdelrazik; Mariam Oweda; Mohamed El-Hadidi</i>	
DIABETES PREDICTION USING MACHINE LEARNING: A COMPARATIVE STUDY	279
<i>Mohamed Rady; Kareem Moussa; Mahmoud Mostafa; Abdelrahman Elbasry; Zeyad Ezzat; Walaa Medhat</i>	
CFD ANALYSIS OF TRANSIENT BLOOD FLOW IN A CEREBRAL ANEURYSM: A COMPARISON BETWEEN A HEALTHY AND DISEASED MODEL	283
<i>Ahmed Elakhdar; Moustafa Elhagri; Chris Naguib; Mohamed Elshabrawy</i>	
COMPARATIVE STUDY FOR DIFFERENT URANS MODELS FOR CAPTURING FLOW SEPARATION INSIDE A PLANE DIFFUSER	287
<i>Ashraf Kassem; Mohamed Madbouly; Amr Guaily</i>	
CONSISTENCY ANALYSIS OF MADD RULES IN THE HOLY QURAN	291
<i>Karim Aly Mohammad; Ahmed H. Kandil; Ahmed M. El-Bialy; Sahar Ali Fawzi</i>	
A PROACTIVE MANAGEMENT ASSISTANT CHATBOT FOR SOFTWARE ENGINEERING TEAMS: PROTOTYPE AND PRELIMINARY EVALUATION	295
<i>Abdelrahman H. Hefny; Georgios A. Dafoulas; Manal A. Ismail</i>	
VISUAL DATA ACQUISITION FOR MEASURING DEVICES USING DEEP LEARNING	301
<i>Youssef Abdelrahman; Mostafa El-Salamony; Mohamed Khalifa</i>	
A COMPARATIVE SIMULATION STUDY OF DG-MOSFETS: PCMS APPROACH IN FETMOSS VS. CMS IN SILVACO TCAD	305
<i>Marwa S. Salem; Mohamed El-Banna; Mohamed Abouelatta; Ahmed Saeed; Ahmed Shaker</i>	
BIVARIATE DOUBLE DENSITY DISCRETE WAVELET FOR ENHANCED IMAGE DENOISING	308
<i>Gamal Fahmy; Mamdouh F. Fahmy; Omar Fahmy</i>	

FLEXSIM SIMULATION TO ENHANCE PRODUCTIVITY OF A PRODUCTION CELL: A CASE STUDY	312
<i>Shahd Yaser; Nour Abdelatif; Irene Fahim; Youssef Emad; Abdelrahman Saleh; Sally S. Kassem</i>	
LTE UPLINK INTERFERENCE INSPECTION USING CONVOLUTIONAL NEURAL NETWORKS	318
<i>Amr Medhat; Mustafa Elattar; Omar M. Fahmy</i>	
MULTIOBJECTIVE OPTIMIZATION OF FUNCTIONALLY GRADED MATERIAL COLUMNS	323
<i>Mohamed Mahran Kasem; Karam Y. Maalawi</i>	
AN INFLUENCE OF THE ELECTRODE GEOMETRY ON THE DISTRIBUTION OF DIELECTROPHORETIC FORCE EFFECT ON THE IMPEDANCE EXTRACTION IN MICROFLUIDIC SYSTEMS	327
<i>Sameh Sherif; Yehya H. Ghallab; Mohamed T. El-Wakad; Yehea Ismail</i>	
ESLDL: AN INTEGRATED DEEP LEARNING MODEL FOR EGYPTIAN SIGN LANGUAGE RECOGNITION	331
<i>Soha Ahmed Ehsan Aly; Aya Hassanin; Saddam Bekhet</i>	
HYBRID IRRIGATION SYSTEM IN EGYPT: DESIGN AND OPTIMIZATION	336
<i>Mahmoud N. Zidan; Mahmoud Y. Abdelmoez; Ahmed N. Ahmed; Reem Sobh; Hagar Hisham; Amgad A. El-Deib</i>	
MULTI-ARCHITECTURE FAULT-TOLERANT APPROACH FOR IN-MISSION CONSTRAINT & REQUIREMENT VARIABILITY	341
<i>Beatrice Shokry; Tarek K. Refaat; Hassanein H. Amer</i>	
GATE-ON-SOURCE TFET ANALYTICAL MODEL: ROLE OF MOBILE CHARGES AND DEPLETION REGIONS	345
<i>Mahmoud Eliwy; Muhammad Elgamal; Marwa Salem; Mostafa Fedawy; Ahmed Shaker</i>	
SOR WEIGHTING FACTOR OPTIMIZATION OF AC SYSTEMS AND ELECTRICAL CIRCUITS	350
<i>Wassim Alexan; Ziad Amr; Abdelrahman Elkhateeb; Eyad Mamdouh; Hana Khalil; Fahd Al-Seba'Ey</i>	
A STOCHASTIC MODELING OF THE GAIN IN WAVEGUIDE AVALANCHE PHOTODETECTORS (WG-APDS)	355
<i>Yasser M. El-Batawy; Mohamed I. Wafa</i>	
SECURING SENSITIVE DATA THROUGH CORNER FILTERS, CHAOTIC MAPS AND LSB EMBEDDING	359
<i>Wassim Alexan; Eyad Mamdouh; Abdelrahman Elkhateeb; Fahd Al-Seba'Ey; Ziad Amr; Hana Khalil</i>	
EFFICIENT QUERING BLOCKCHAIN APPLICATIONS	365
<i>Noha Ahmed Thabet; Nashwa Abdelbaki</i>	
DESIGN, SIMULATION, AND KINEMATICS OF 9-DOF SERIAL-PARALLEL HYBRID MANIPULATOR ROBOT	370
<i>Mahmoud Elsamanty; Ehab M. Faidallah; Yehia H. Hossameldin; Saber M. Abd Rabbo; Shady A. Maged</i>	
FPGA DESIGN OF HIGH-SPEED CONVOLUTIONAL NEURAL NETWORK HARDWARE ACCELERATOR	376
<i>Ahmed J. Abd El-Maksoud; Abdallah Mohamed; Ahmed Tarek; Amr Adel; Amr Eid; Farida Khaled; Fatma Khaled; Ziad Ibrahim; Eman El Mandouh; Hassan Mostafa</i>	
GUAVA TREES DISEASE MONITORING USING THE INTEGRATION OF MACHINE LEARNING AND PREDICTIVE ANALYTICS	380
<i>Mahmoud Elsayed; Nourhan Hassan; Marina Maher; Nouran Waleed; Rehab Reda; Haitham Sharaf Eldin; Hassan Mostafa</i>	
ASIC-FPGA GAP FOR A RISC-V CORE IMPLEMENTATION FOR DNN APPLICATIONS	385
<i>Abdelrahman S. Hussein; Hassan Mostafa</i>	
A 10 GB/S SERDES TRANSCEIVER	389
<i>Abdelrahman M. Sawaby; Abdelrahman M. Elshorbge; Omar T. Abdelhalim; Mahmoud A. Farghaly; Mahmoud Sherif Taha; Yehia Hamdy Yehia; Salma El-Sawy; Mohamed Samir Fouad; Hassan Mostafa</i>	
DESIGN AND FEA-BASED METHODOLOGY FOR A NOVEL 3 PARALLEL SOFT MUSCLE ACTUATOR	394
<i>Mahmoud Elsamanty; Ahmed Eltayeb; Mohamed A. Wahby Shalaby</i>	
SNAPE-FP: SQUEEZENET CNN WITH ACCELERATED POOLING LAYERS EXTENSION BASED ON IEEE-754 FLOATING POINT IMPLEMENTATION THROUGH SW/HW PARTITIONING ON ZYNQ SOC	400
<i>Abdelrhman M. Abotaleb; Mohab H. Ahmed; Mazen A. Fathi</i>	
A BRIEF SURVEY ON 3D SEMANTIC SEGMENTATION OF LIDAR POINT CLOUD WITH DEEP LEARNING	405
<i>N/A</i>	
TWO-TERMINAL PEROVSKITE/SILICON SOLAR CELL: SIMULATION AND ANALYSIS	409
<i>Mohamed Mousa; Fathy Z. Amer; Ahmed Saeed; Roaa I. Mubarak</i>	

MICROSCALE CLAD THICKNESS MEASUREMENT AFTER LASER CLADDING VIA LASER SPECKLE PHOTOGRAPHY	413
<i>Doaa Youssef; Samar Reda Al-Sayed</i>	
MODELING OF NONLINEAR ENHANCED AIR LEVITATION SYSTEM USING NARX NEURAL NETWORKS	416
<i>Hazem A. Taha; Mohamed K. Othman; Nada E. Abbas; Yara K. Sayed; Hossam Hassan Ammr; Raafat Shalaby</i>	
MODELING COLLABORATIVE AI FOR DYNAMIC SYSTEMS OF BLOCKCHAIN-ED AUTONOMOUS AGENTS.....	421
<i>Hisham Arafat Shehata; Mohamed El-Helw</i>	
DESIGN AND IMPLEMENTATION OF CAIRO UNIVERSITY GRAPHICS PROCESSING (CUGPU) USING HLS APPROACH.....	427
<i>Abdulkareem Mohammed Ibrahim; S. E. D. Habib</i>	
POTENTIAL PROBIOTICS FOR VIRAL TRIGGERED TYPE 2 DIABETES	430
<i>Mariam Oweda; Joseph N. Tanyous; Mohamed Hamed; Mohamed El-Hadidi</i>	
IMPACT OF COVID-19 ON INFORMATION TECHNOLOGY SECTOR IN EGYPT	436
<i>Walaa Medhat; Sahar Fawzi; Omar Fahmy; Gasser Hassan; Mohamed Ramadan; Alaa Abdelbary; Ahmed Hassan</i>	
Author Index	