# **Patent Selections:**

The Patents annotated in this section have been selected from various Patent databases. These recent Patent s are relevant to the articles published in this journal issue, categorized by different computation methods, bioinformatics, medical informatics, computer graphics, artificial intelligence, cybernetics, hardware architectures, software, theory and methods involved and related to computer science.

#### PROXY SIGNATURE

- 1. G. Tianhan, D. Xinyang, G. Fanghua, G. Nan, "PMIPv6 authentication system and method for ID-based proxy signature," CN Patent 1,06,507,355, 2017.
- T. Youliang, P. Qiao, C. Gong, "Proxy blind signature-based anti-scalping sensitive data transaction method," CN Patent 1,06,375,097, 2017.
- 3. L. Huixian, S. Lu, H. Zhipeng, P. Liaojun, "Proxy resignature method based on IP signature," CN Patent 1,06,789,066, 2017.

#### ACCESS CONTROL

- P. Marcel, P. Peter, W. Michael, "Electronic access control applying an intermediate," CA Patent 2,989,255, 2017.
- B. Julien, S. Pierre, "A removable security device and a method to prevent unauthorized exploitation and control access to files," TW Patent 2,01,738,802, 2017.
- 3. P. Jason, "Register access control," TW Patent 2,01,734,821, 2017.
- G. Qing-Hai, N. D. Houghton, T. Ehab, "Dynamic medium access control reception-reorder timeout in a crowded wireless local area network," TW Patent 2,01,737,746, 2017.
- 5. B. P. Douros, S. A. Revilak, "Method and architecture for providing database access control in a network with a distributed database system," CA Patent 2,991,128, 2017.
- 6. A. Kukawka, I. S. Hassan, "System and method for cognition-dependent access control," CA Patent 2,992,075, 2017.
- 7. M. Bryla, "Method and system for managing harvested energy in an access control system," KR Patent 20,170,137,029, 2017.
- 8. J. S. Park, "Energy efficient method for access control in small cell network," KR Patent 1,01,813,699, 2017.
- 9. A. Riaan, E. R. André, "Access control arrangement," ZA Patent 2,01,602,528, 2017.
- 10. M. J. Vickers, R. K. Drury, "Systems for access control and system integration," ZA Patent 2,01,602,740, 2017.

### **SEMANTIC WEB**

- F. Yang, C. Wang, "Network search method based on semantic web technology," CN Patent 1,07,193,873, 2017.
- 2. A. K. Duke, N. J. Davies, T. Omitola, "Search engine and link-based ranking algorithm for the semantic web," US Patent 2,017,177,729, 2017

- 3. D. Geng, Q. Zhang, P. Wang, Y. Yu, C. Chen, G. Gong, Q. Gao, Y. Wen, "Semantic Web service discovery framework and method based on user preference," CN Patent 1,06,686,147, 2017.
- 4. J. S. Yoo, K. S. Bok, S. W. Yoon, M. H. Lee, D. M. Seo, S. J. Yu, "Method and apparatus for determination of trust based on management of data usage histories in social semantic web," KR Patent 20,170,037,756, 2017.
- 5. J. S. Yoo, K. S. Bok, J. Y. Park, "Method and apparatus for managing materialized view to enhance processing of semantic web data," KR Patent 1,01,725,502, 2017.
- 6. G. Breiter, D. Jall, M. Mueller, A. Neef, M. Reitz, "Semantic web technologies in system automation," US Patent 2,017,004,016, 2017.

#### SIMILARITY DEGREE

- 1. S. Gao, R. Zhou, N. Wang, L. Gong, "Short-text similarity degree calculation method based on multi-feature fusion," CN Patent 1,07,273,913, 2017.
- 2. H. Furihata, M. Orio, S. Saito, T. Nose, A. Sugiyama, "Calculation of degree of similarity between two images," US Patent 2,017,293,823, 2017.
- 3. Y. Nagai, T. Ueno, "Device of tracking object taking similarity degree between images into consideration, program thereof and method thereof," JP Patent 2,017,156,886, 2017.
- 4. H. Kanayama, A. Kosugi, "Calculation of a degree of similarity of users," US Patent 2,017,212,950, 2017.

### TENNIS BALL COLLECTOR

1. X. Wang, "Table tennis ball collector," CN Patent 1,06,823,311, 2017.

### **SMART VEHICLE**

- B. J. Lee, D. Y. Cho, K. H. Han, "Smart key for vehicle and control method thereof," KR Patent 20,170,135,291, 2017.
- 2. Q. Xiong, K. S. L. Chow, "In-vehicle smart key system used for one-click order competition," TWM Patent 5,48,857, 2017.
- 3. L. Yu, T. Zhang, "Method of building smart vehicle control model, and method and apparatus for controlling smart vehicle," US Patent 2,017,361,873, 2017.
- 4. G. Li, X. Wan, "Method for controlling unmanned aerial vehicle using smart device," US Patent 2,017,357,255, 2017.

- J. Liu, X. Liu, C. Song, Z. Ouyang, "Vehicle diagnosis method and smart wearable device," WO Patent 2,017,206,459, 2017.
- 6. H. Yang, Z. Yin, "Utility vehicle smart card that passes based on RFID," CN Patent 2,06,178,951, 2017.
- 7. J.-H. Moon, J.-C. Kim, H. H. Lee, "Smart adaptor for vehicle," KR Patent 1,01,733,045, 2017.
- 8. Y. Jiang, F. Zhou, P. Qing, Y. Shuai, "Smart lighting system, smart vehicle and driver assistant system and method thereof," CN Patent 1,07,274,695, 2017.
- 9. A. M. A. Ansari, "Smart vehicle," US Patent 2,017,287,335, 2017.
- 10. A. Shimada, "On-vehicle device, smart key system, signal transmission method," JP Patent 2,017,183,988, 2017.

#### **MICROCONTROLLER**

- 1. W.-C. Yu, "Energy-saving and movable multifunctional constant-temperature-moisture machine with microcontroller," TWM Patent 5,50,805, 2017.
- P. K. Balasubramanian, "Microcontroller power reduction system and method," US Patent 2,017,371,396, 2017.
- 3. Y. P. Ho, L. H. Kan, Y. K. Wing, "Power supply with microcontroller for circuit protection," US Patent 2,017,374,720, 2017.
- 4. F. Berthier, O. Debicki, O. Sentieys, E. Beigne, F. Heitzmann, "Asynchronous core processor and a sensor node communication microcontroller including the same," US Patent 2,017,357,505, 2017.
- 5. S. Dominique, D. Michel, "Lighting device such as a self-contained emergency lighting block and method for supplying electricity to a microcontroller in such a lighting device," PT Patent 2,916,426, 2017.
- H. Jayakumar, A. Raha, V. Raghunathan, "Microcontroller energy management system," US Patent 2,017,343,987, 2017.
- 7. K. V. Sakariya, A. Bibl, K. McGroddy, "Smart pixel lighting and display microcontroller," KR Patent 20,170,121,327, 2017.
- 8. A. Senapati, S. Steedman, B. Loertscher, "Enhanced low cost microcontroller," US Patent 2,017,329,611, 2017.
- 9. S. Huang, J. Qi, S. Cross, "Method and apparatus of provisioning a microcontroller *via* acoustic signaling," US Patent 2,017,329,296, 2017.
- 10. A. Avrukin, S. Song, M. Shah, T. Zou, "A method and device for improved Advanced Microcontroller Bus Architecture (AMBA) and Advanced Extensible Interface (AXI) operations," WO Patent 2,017,196,143, 2017.

## **AUTOMATIC CONTROL**

1. M. L. Jan, S. P. Tseng, C. H. Chang, "Automatic exposure control system for a digital x-ray imaging device and method thereof," TWI Patent 6,06,752, 2017.

- C.-C. Chenzhang, "Water leakage detection device with automatic/manual control of solenoid operation," TWM Patent 5,50,826, 2017.
- 3. X.-X. Fang, "Electrostatic dust collector control device with automatic shutdown function," TWM Patent 5,49,659, 2017.
- 4. P.-C. Chen, W.-C. Yang, "Automatic exposure control and image contrast adjustment system," TWI Patent 6,03,623, 2017.
- 5. T.-Y. Wu, "Automatic walking device and control method thereof," TWI Patent 6,00,991, 2017.
- 6. K. M. Lee, J. Y. Whang, S. H. Jo, "Automatic transmission for vehicle and control method thereof," KR Patent 20,170,136,298, 2017.
- 7. S. H. Jung, "Automotive interior temperature automatic control," KR Patent 20,170,141,354, 2017.
- 8. S. H. Lee, "Remote control system for automatic fire alarm equipment," KR Patent 1,01,811,393, 2017.
- 9. J. S. Jung, "Automatic dispensing device of detergent and fabric softerner for laundry treating machine and control method thereof," KR Patent 20,170,138,858, 2017.
- 10. B. M. Kim, S. H. Paik, "Light source and detector automatic control device for detect brain hemodynamic signals," KR Patent 20,170,131,960, 2017.

#### **POWER TRANSFORMER**

- 1. Y.-J. Chen, X.-Z. Huang, "Floor-to-ceiling latch structure for transformer power distributing box," TWM Patent 5,51,373, 2017.
- 2. H. S. Park, "Uninterruptible connecting panel of transformer for underground power distribution line," KR Patent 1,01,794,297, 2017.
- 3. N. U. Kim, I. T. Kim, D. W. Kim, "Real-time recovery transformer system and its method of construction in case of single-phase power line failure," KR Patent 1,01,803,431, 2017.
- 4. M. S. Bang, "SCR Battery charger controlling charging power by using leakage transformer and SCR and battery charging method using the same," KR Patent 1,01,802,088, 2017.

### **IMAGE RESTORATION**

- 1. L. Hou, P. Zhu, "Image restoration method and device, computer readable storage medium, and terminal," CN Patent 1,07,292,840, 2017.
- 2. H. Feng, H. Su, Z. Xu, Q. Li, Y. Chen, "TDI flutter image restoration method based on image block adaptive adjustment," CN Patent 1,07,292,839, 2017.
- 3. X. Chen, Y. Yang, H. Shi, H. Li, "Improved dark channel prior single width atomization image restoration method based on physical model," CN Patent 1,07,274,366, 2017.

### SPARSE REPRESENTATION

1. Y. Li, X. Xue, X. Hu, "Local sparse representation and particle swarm optimization-based robust target tracking method," CN Patent 1,07,301,652, 2017.

- 2. S. Liu, X. Shen, J. Cao, T. Yang, M. Tang, X. Zhou, "Transform domain/joint sparse representation-based image reconstruction method," CN Patent 1,07,301,629, 2017.
- 3. S. Liu, X. Shen, J. Cao, K. Zhang, X. Zhou, Z. Li, "Sorting joint sparse representation-based SAR image despeckling method," CN Patent 1,07,301,632, 2017.
- 4. T. Wang, G. Liu, X. Zhu, H. Cheng, H. Jiang, "Signal sparse representation method based on affine scaling steepest descent algorithm," CN Patent 1,07,302,362, 2017.
- Q. Zhang, Y. Liu, Y. Guan, Z. Huo, L. Wang, "Robust sparse representation and Laplace regular term-based salient object detection method," CN Patent 1,07,301,643, 2017.

# **ENCRYPTION ALGORITHM**

- 1. L. Wang, X. Xiong, "Hardware implementation system for SM2 elliptic curve public key encryption algorithm under pixel field Fp," CN Patent 1,07,294,720, 2017.
- J. Zhang, D. Huo, "Chaotic system based quantum color image encryption algorithm," CN Patent 1,07,274,458, 2017.
- 3. Z. Li, "Method and apparatus for data encryption and decryption based on cryptographic algorithm," CN Patent 1,07,276,961, 2017.
- 4. X. Liu, "RC4 algorithm-based code full-packet encryption method," CN Patent 1,07,257,282, 2017.
- 5. X. Zhang, "Password encryption method and system based on one-direction and public key encryption algorithm," CN Patent 1,07,257,349, 2017.

## **ENCRYPTION TIME**

- J. He, C. Xu, X. Zheng, X. Xiong, "Real-time video encryption transmission method based on AES encryption," CN Patent 1,07,105,273, 2017.
- S. Zhu, J. Long, L. He, X. Shi, C. Jing, X. Tu, S. Zhang, Z. Xu, J. Deng, "Device for collecting encryption data of gate controller HDLC and data of drive motor in real time," CN Patent 1,07,015,509, 2017.
- 3. X. Xie, X. Huang, T. Duan, W. Wang, H. Hu, B. Han, "Ultrahigh-speed all-optical data real-time encryption/decryption systems and methods based on composite logic," CN Patent 1,06,888,053, 2017.

- C. Cheng, X. Zhou, Y. Lao, "Real-time multimedia encryption method based on identity-based cryptography," CN Patent 1,06,788,997, 2017.
- 5. L. Yan, P. Ye, B. Tu, "Multiple time programmable hardware encryption method and apparatus," CN Patent 1,06,599,693, 2017.

#### DES

- 1. T. Ma, Y. Zuo, C. Zhang, C. Ma, H. Liu, "Ocean environment monitoring method based on DES (data encryption standard) satellite and Beidou cloud system," CN Patent 1,06,546,708, 2017.
- 2. C. Ma, C. Zhang, T. Ma, Y. Zuo, H. Liu, "DES satellite and Beidou cloud system-based atmosphere environment monitoring method," CN Patent 1,06,546,293, 2017.
- 3. J. Xie, X. Gan, "High -density interconnect circuit board DES production system," CN Patent 2,06,402,540, 2017.
- 4. R. Zhang, Q. Zhang, Y. Zhou, T. Ding, "DES encryption and decryption key generator and key generation method," CN Patent 1,06,877,999, 2017.
- 5. Z. Feng, "Safe MAC calculation method and system of DES algorithm," CN Patent 1,06,656,473, 2017.

### **UWSN**

1. J. Wang, W. Shi, H. Zhu, L. Zhou, J. Wang, Z. Chen, T. Xu, "UWSN (Underwater Wireless Sensor Network) networking method and UWSN node device," CN Patent 1,06,937,348, 2017.

#### **ROUTING NODE**

- 1. Z. Ren, Z. Wang, C. Peng, B. Wang, C. Lin, "Distributed network routing method, node and system," WO Patent 2,017,214,808, 2017.
- 2. C.-H. Chen, K.-J. Fang, Y.-C. Chung, "Routing method and wireless node for wireless mesh network," TWI Patent 6,04,744, 2017.
- 3. Z. Ren, B. Wang, "Distributed network routing method and node," WO Patent 2,017,214,810, 2017.
- 4. G. Du, "Edge routing node and reporting frequency adjustment method thereof," CN Patent 1,07,197,034, 2017.
- 5. G. Du, "Method and device for controlling edge routing node to update routing information table," CN Patent 1,07,197,502, 2017.