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TOEFL: **105** (R29 + L28 + S20 + W28) | GRE: **329 + 4** (V159 + Q170 + AW4.0)

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Education

- **BS (Major): College of Cyber Security, Jinan University** *Sep. 2019 - Jun. 2023*
(Major GPA: **4.09/5.00**, Ranking: **2**, top 3% in Class)
 - ✧ Major: Cyber Security
 - ✧ Thesis: A Malware Detection Approach Based on ResNet and Word2vec (**93; Excellent Thesis@JNU**)
 - ✧ Supervisor: Associate Prof. Peiya Li
- **BS (Minor): School of Economics, Jinan University** *Sep. 2020 - Jun. 2022*
 - ✧ Minor: Finance
 - ✧ Thesis: Research on Measuring Housing Investor Sentiment: Based on News Images
 - ✧ Supervisor: Associate Prof. Yingnan Chen
- **Ph.D. (Full-time with Postgraduate Scholarship): Department of Computer Science, The University of Hong Kong** *Sep. 2023 - Present*
 - ✧ Major Research Interest: Malware Detection
 - ✧ Group: Cyber Security, FinTech and Blockchain
 - ✧ Primary Supervisor: Prof. Siu-Ming Yiu (Deputy Head of Department of Computer Science, The University of Hong Kong; Executive Director of HKU-SCF FinTech Academy, The University of Hong Kong)
 - ✧ Co-supervisor: Prof. Tak-Wah Lam (Associate Dean of Faculty of Engineering, The University of Hong Kong)

Major Research Interest

- **Malware Detection**
 - ✧ Propose a new malware detection framework *GooseBt* to run kernel-level dynamic rules and static rules, whose codes are over 1,000,000 lines
 - ✧ Propose a multi-modal malware detection approach based on ResNet50 and word2vec
 - ✧ Present a literature review of the development and future of malware detection (in academics) and anti-virus software (in industry)
 - ✧ Use PC Hunter Standard, YDARK, and Twrp-KernelSU-LSPosed-Plugins framework to perform malware analysis including RT monitoring and RTI on Windows and Android

Selected Publication

- **Yang Y**, Lin Y, Li Z, et al. GooseBt: A programmable malware detection framework based on process, file, registry, and COM monitoring[J]. Computer Communications, 2023, 204: 24-32.
- **Yang Y**, Lin Y, Chen Z, et al. SNPERS: A Physical Exercise Recommendation System Integrating Statistical Principles and Natural Language Processing[J]. Electronics, 2022, 12(1): 61.
- Wang X¹, Lin Y¹, **Yang Y**¹, et al. A secure physical health test data sharing scheme based on token distribution and programmable blockchains[J]. Computer Communications, 2023, 209: 444-454.
- **Yang Y**, Wang Y, Liu X, et al. The Application of Information Science in Physiology and Medicine and Its Significance[J]. Progress in Physiological Sciences, 2023, 54(03): 199-206. DOI: [10.20059/j.cnki.pps.2022.11.1093](https://doi.org/10.20059/j.cnki.pps.2022.11.1093).
- Ding W, Luo Y, Lin Y*, **Yang Y***, Lian S. VeriBypasser: An automatic image verification

- code recognition system based on CNN[J]. Computer Communications. (Accepted)
- Lin Y, **Yang Y**, Zhang Y. Improved differential evolution with dynamic mutation parameters[J]. Soft Computing, 2023: 1-19.
- Lei Y, Wu Z, Li Z, **Yang Y**, Liang Z. BP-CapsNet: An image-based Deep Learning method for medical diagnosis[J]. Applied Soft Computing, 2023: 110683. (**Top**)
- Chen Y, Wu A, **Yang Y**, et al. Efficient Verifiable Cloud-Assisted PSI Cardinality for Privacy-Preserving Contact Tracing[J]. IEEE Transaction on Cloud Computing. (Accepted)
- Wang Y, **Yang Y**, Liu M. Electrophoretic deposition of halloysite nanotubes/PVA composite coatings for corrosion protection of metals[J]. Applied Materials Today, 2022, 29: 101657.

Review Experiences

- 30 review experiences in 12 journals (41 rounds)
 - Soft Computing (SOCO) * 10
 - Computer Communications (COMCOM) * 2 (Proxy Review)
 - Engineering Applications of Artificial Intelligence (EAAI, **Top**) (Proxy Review),
 - International Journal of Electrical and Computer Engineering (IJECE) * 9
 - Journal of Cardiovascular Medicine and Cardiology (JCMC)
 - Journal of Sports Medicine and Therapy (JSMT)
 - Annals of Mathematics and Physics (AMP)
 - Journal of Novel Physiotherapy and Rehabilitation (JNPR)
 - Journal of Autonomous Intelligence (JAI)
 - IgMin Research - STEM | A Multidisciplinary Journal
 - International Journal of Environment and Climate Change (IJECC)
 - Journal of Cardiology and Cardiovascular Medicine (JCCM)
- 11 review experiences in 8 international conferences (13 rounds)
 - The 5th International Conference on Mechanical, Electric and Industrial Engineering (MEIE 2022)
 - International Conference on Networks, Communication and Information Technology (NCIT 2022)
 - The 6th International Conference on Mechanical, Electric and Industrial Engineering (MEIE 2023) * 2
 - The 6th International Workshop on Environment and Geoscience (IWEG 2023)
 - The 6th International Conference on Physics, Mathematics and Statistics (ICPMS 2023)
 - The 7th International Conference on Computer Science and Application Engineering (CSAE 2023) * 2
 - The 25th International Conference on Information and Communications Security (ICICS 2023) (Proxy Review)
 - International Conference on Frontiers of Electronic, Electrical and Computer Science (ICFEECS 2024) * 2

Intellectual Properties

- Software for predicting postoperative indicators based on machine learning (2021SR1313007, first author)
- A big data computer network security protection device (Authorized utility model patent: ZL 2021 2 1936474.9, first author)
- Universal Word Calculator (UWC) text processing tools (2022SR0999915, first author)
- wmip: An integrated process manager (2022SR1006107, first author)
- Win DOS: A kind of general maintenance software for Windows (2022SR1079851, first author)
- Linux DOS: A kind of maintenance software for Linux (2022SR1079597, second author)
- Sports dance protective mat (Authorized design patent: ZL 2023 3 0182497.3, fourth author)
- A Hard Disk Installation Extender for Computers (Authorized utility model patent: ZL 2023 2 0724372.3, second author)
- U disk (Authorized design patent: ZL 2023 3 0182496.9, second author)
- Image target detection method, system, and equipment under severe weather conditions (Authorized invention patent: ZL 2023 1 0579491.9, tenth author)
- A sports dance training device (Authorized utility model patent: ZL 2023 2 1090699.6, fourth author)

author)

Project Experiences

- **National Innovation and Entrepreneurship Training Program for Undergraduate**
 - Research on stock prediction model integrating investor sentiment calculation (202010559054)
- **Guangdong Innovation Fund Project**
 - A malware detection model combining active defense technique and binary image distribution (pdjh2022b0060)
- **Research projects on scientific and technological innovation and sports culture development of Guangdong Province Sports Bureau (2022-2023)**
 - A physical exercise recommendation system integrating statistical principles and natural language processing (GDSS2022N068)
- **Academy of Macaology**
 - A physical exercise recommendation system integrating statistical principles and natural language processing (12622971)
- **Challenge Cup Project**
 - Pathological tissue slice recognition system for biomedical images based on segmentation network and U-Net (20113053)
 - A malware detection framework combining active defense technique and binary image distribution (22113016)
- **University Innovation and Entrepreneurship Training Program for Undergraduate**
 - Breast cancer pathological slice image recognition system based on ResNet-34 (CX20011)
 - A malware detection framework combining active defense technique and binary image distribution (CX21084)

Selected Awards and Honors

- The **first national gold medal** for Jinan University in *The 7th China International College Student "Internet+" Innovation and Entrepreneurship Competition* (**Top** event among domestic college students' entrepreneurship activities in China)
- **2021-2022 National Scholarship (Only 1** in the whole class)
- The Second-class Prize of the 2022 National Data Analysis Popular Science Knowledge Competition for College Students
- Excellent Student of the first training course for the Guangdong Digital Government Construction Talent Training Program (Academy of Political Culinary)
- **Excellent Graduate Award of Jinan University**
- **Excellent Undergraduate Thesis of Jinan University**
- **Extraordinary Undergraduate Student Award of Jinan University (Top 10)**
- Jinan's 5A Elite Students Program "Star of Jinan" (The **first one** in the college)
- Arowana Scholarship (**Top 1** in the College)
- Excellent Student Award of Jinan University * 2
- Excellent Student First-class Scholarship of Jinan University * 2

Internship Experiences

Micropoint Wisdom (Beijing) Information Security Technology Co., Ltd (2018.6 - Present)

- Internal test of *Micropoint Proactive Defense Software*
- Discover and fix leaks affecting self-protection
- Help develop kernel driver and work out the best tip rules

Maintain of WeChat Applet *JiQuan* in Jinan University (2021.3 - 2023.1)

- Discover and fix "vsftpd" leaks
- Program automatic shell scripts to optimize the server based on data mining

Product Experience Officer at Applet *We2000* in WeBank (2021.12 - 2022.3)

- Perform customer profile analysis

Managed Security Service (MSS) in Qi An Xin Technology Group Inc. (2022.7 - 2022.8)

- Discuss malware and other security issues in industry
- Perform subscription analysis for customers

Student Works

- 17 student work positions during undergraduate (selected positions as follows)
 - The Deputy Secretary of the Communist Youth League at College of Cyber Security, Jinan University (2021-2022)
 - The leader of the Technical Department of Youth Volunteer Association at College of Cyber Security, Jinan University (2020-2021)
 - The Academic Department of the Youth League Branch at Department of Cyber Security, College of Cyber Security, Jinan University (2020-2021)
 - A teaching assistant of Cyberspace Security Online Summer Training Camp (2019-2020-2), Mathematical Fundamentals of Information Security (2021-2022-2), Python Program Design (8 semesters among 2019-2020 and 2021-2024), Freshman Training Camp (2020-2021)
 - The deputy monitor at the 2019 Natural Class of Cyber Security (2019-2020)
- 1 student work position during Ph.D.
 - A teaching assistant for FinTech (CCST9080) (2023-2024-2)
- Volunteer service: More than 200 hours of volunteering

Skills

- Positive, hard-working, willing to contribute to teams, and interested in cross-field research
- Capable of Python, C, C++, KMDF, Java, cmd, shell, etc. programming and have over-1-million-line codes on GitHub
- Have been testing anti-virus software from 1G to 4G in the real environment since 2010

Cross-field Research Interests

- **Algorithm Optimization**
 - ✧ Combined CEEMDAN, SE, and GWO-based LSTM to CEEMDAN-SE-GWO-LSTM
 - ✧ Improved DE algorithms with different convergent function schemes
 - ✧ Used DE to solve uncapacitated facility location problems (UFLPs)
 - ✧ Provided surveys of image hiding and image encryption algorithms
 - ✧ Proposed TFUI to mine top- k highest utility and frequency data
 - ✧ Designed Top k querying with pruning based on grids, R-trees, and sequential accesses
- **Applied Artificial Intelligence**
 - ✧ Trained DeepLabCut (DLC) models to trace mice and analyze the correlation between mice and brain waves
 - ✧ Built a drift-considered physical education recommendation system based on traditional statistical methods and natural language processing (NLP)
 - ✧ Added a fully connected layer to optimize ResNet34 on pathological sections and migrated the general eight-class classification model to various fields
 - ✧ Generated a new dataset and proposed nucleusmax for summarizing radiology reports
 - ✧ Predicted financial market and stock value based on text analysis from comments
 - ✧ Analyzed the correlation between text, images, etc. in news reports and combined textual sentiment, images' sentiment, etc. to figure out news reports' sentiment to reflect the investors' sentiment to predict assets' prices like second-hand house prices
 - ✧ Built a tool to implement textual sentiment calculation based on Python
 - ✧ Trained common machine learning models constrained by statistical principles
- **Cryptography**
 - ✧ Implemented some secure multi-party computation schemes
 - ✧ Constructed a bi-linear pairing cipher scheme based on the elliptic curve
- **Halloysite**
 - ✧ Designed anti-corrosion verification experiments for surface modification
 - ✧ Performed halloysite properties exploration experiments and recorded experimental data

Full Publication (In Time Order)

- [1] Zhong Z, Yuan X, Liu S, **Yang Y**, F Liu. Machine learning prediction models for prognosis of critically ill patients after open-heart surgery[J]. Scientific Reports, 2021, 11(1): 1-10.
- [2] Dai Y, Wang H, **Yang Y**. Spatiotemporal distribution analysis of Vespa Mandarinina based on GM model[C]//Journal of Physics: Conference Series. IOP Publishing, 2021, 1952(4): 042126.
- [3] **Yang Y**, Liu Y, Chen S, et al. Machine learning distribution model and auxiliary diagnosis

system based on pathological sections from multiple parts of human beings[C]//2021 International Conference on Security, Pattern Analysis, and Cybernetics (SPAC). IEEE, 2021: 439-444.

- [4] **Yang Y**, Lin Y, Chen S, et al. Reported sighting detection of Asian Vespa mandarinia based on ResNet50[J]. Basic & Clinical Pharmacology & Toxicology. (Journal Abstract)
- [5] **Yang Y**, Chen Z, Chen S, et al. Avpd: An Anti-virus Model with Remote Thread Injection for Android Based on ResNet50[C]//Journal of Physics: Conference Series. IOP Publishing, 2022, 2203(1): 012078.
- [6] **Yang Y**, Chen S, Chen Z, et al. ISSPM: A stock prediction model incorporating investor sentiment calculations based on fusedmax[C]//2021 8th International Conference on Information, Cybernetics, and Computational Social Systems (ICCSS). IEEE, 2021: 331-337.
- [7] **Yang Y**, Lei Y, Chen Z, et al. Explore the relationship between textual sentiments and pictures' emotions based on unit quantification[C]//International Conference on Computer, Artificial Intelligence, and Control Engineering (CAICE 2022). SPIE, 2022, 12288: 39-45.
- [8] He Z, **Yang Y**, Zhao S. Towards Pre-trained Language Model for Dynamic Disturbance[C]//2021 3rd International Academic Exchange Conference on Science and Technology Innovation (IAECST). IEEE, 2021: 480-484.
- [9] **Yang Y***, Du R, Tang H, et al. SSLPNet: A financial econometric prediction model for small-sample long panel data[C]//2021 The 9th International Conference on Information Technology: IoT and Smart City. 2021: 174-180.
- [10] Xia Y, Chen Y, Luo H, **Yang Y**, Wang X. Research and Improvement on the Development of Robo-Advisor: Present and Prospect[C]//2022 4th International Conference on Image, Video and Signal Processing. 2022: 172-178.
- [11] **Yang Y***. Development and future of information hiding in image transformation domain: A literature review[C]//Proceedings of the 4th International Conference on Image Processing and Machine Vision. 2022: 72-77.
- [12] Lei Y, Cui Z, **Yang Y**, et al. STDAPM: Spatial and Temporal Distribution Analysis and Prediction Model of Bee Species based on Grey Model[C]//Proceedings of the 8th International Conference on Computing and Artificial Intelligence. 2022: 152-157.
- [13] Lei Y, Cui Z, Dai L, et al. The Development of Traffic Flow Prediction Based on Deep Learning: A Literature Review[C]//2022 7th International Conference on Computer and Communication Systems (ICCCS). IEEE, 2022: 140-145. (Acknowledgement)
- [14] **Yang Y**, Zhu S, Zhao L, et al. Analysis of Innovative Product Experience Based on Logistic Regression with Data Augmentation[C]//2022 7th International Conference on Computer and Communication Systems (ICCCS). IEEE, 2022: 915-920.
- [15] Xiao N, Li Z, Chen S, Zhao L, **Yang Y**, Xie H, Liu Y, Quan Y, Duan J. Contrast-enhanced CT Image Synthesis of Thyroid Based on Transfomer and Texture Branching[C]//2022 5th International Conference on Artificial Intelligence and Big Data (ICAIBD). IEEE, 2022: 94-100.
- [16] Hu Y, Zhong J, Pan H, **Yang Y**. Research on the Selection of Raw Material Suppliers for Enterprises[C]//2022 13th International Conference on E-business, Management and Economics. 2022: 261-266.
- [17] Zhao W, **Yang Y**, Lu Z. Interval Short-Term Traffic Flow Prediction Method Based on CEEMDAN-SE Noise Reduction and LSTM Optimized by GWO[J]. Wireless Communications and Mobile Computing, 2022, 2022.
- [18] Hu Y, Zhong J, Pan Y, **Yang Y**. Goal Planning of Enterprise Raw Material Ordering and Transshipment Based on Genetic Algorithm and Machine Learning[C]//2022 6th International Conference on Cloud and Big Data Computing.
- [19] Tan H, Deng C, Chen S, et al. Feature selection methods for high-dimensional biomedical time-to-event data: a review[C]//Proceedings of the 5th International Conference on Big Data Technologies. 2022: 113-119. (Acknowledgement)
- [20] Li Z, Chen H, Chen W, Lin S, Zhao R, Qian Y, Wang Z, **Yang Y**, Huang F. Real-time clothing detection networks for surveillance videos[C]//Fourteenth International Conference on Graphics and Image Processing (ICGIP 2022). SPIE, 2023, 12705: 919-929.
- [21] **Yang Y**, Wang Y, Liu X, et al. The Application of Information Science in Physiology and Medicine and Its Significance[J]. Progress in Physiological Sciences, 2023, 54(03): 199-206. DOI: [10.20059/j.cnki.pps.2022.11.1093](https://doi.org/10.20059/j.cnki.pps.2022.11.1093).

- [22] Wang Y, **Yang Y**, Liu M. Electrophoretic deposition of halloysite nanotubes/PVA composite coatings for corrosion protection of metals[J]. *Applied Materials Today*, 2022, 29: 101657.
- [23] Chen H, **Yang Y**, Wu Y. Invalid Message Risks and Analysis of Laws to Restrict Cyber Crime in Social Applications[C]//*Proceedings of the 2022 11th International Conference on Networks, Communication and Computing*. 2022: 341-347.
- [24] **Yang Y**, Lin Y, Chen Z, et al. SNPERS: A Physical Exercise Recommendation System Integrating Statistical Principles and Natural Language Processing[J]. *Electronics*, 2022, 12(1): 61.
- [25] Chen S, Xiao N, Shi X, **Yang Y**, et al. ColorMedGAN: A Semantic Colorization Framework for Medical Images[J]. *Applied Sciences*, 2023, 13(5): 3168.
- [26] **Yang Y**, Lin Y, Li Z, et al. GooseBt: A programmable malware detection framework based on process, file, registry, and COM monitoring[J]. *Computer Communications*, 2023, 204: 24-32.
- [27] Zhao S, Li Q, **Yang Y**, et al. From Softmax to Nucleusmax: A Novel Sparse Language Model for Chinese Radiology Report Summarization[J]. *ACM Transactions on Asian and Low-Resource Language Information Processing*, 2023, 22(6): 1-21.
- [28] Wang X¹, Lin Y¹, **Yang Y**¹, et al. A secure physical health test data sharing scheme based on token distribution and programmable blockchains[J]. *Computer Communications*, 2023, 209: 444-454.
- [29] Lei Y, Wu Z, Li Z, **Yang Y**, Liang Z. BP-CapsNet: An image-based Deep Learning method for medical diagnosis[J]. *Applied Soft Computing*, 2023: 110683. **(Top)**
- [30] Lin Y, **Yang Y**, Zhang Y. Improved differential evolution with dynamic mutation parameters[J]. *Soft Computing*, 2023: 1-19.
- [31] Xiao Z, Lin Y, **Yang Y***, et al. Keep or reject? Candidates' multi-step decisions on offered admissions and analysis of default phenomena[C]//*The 3rd International Conference on Robotics, Automation and Intelligent Control (ICRAIC 2023)*. (Accepted)
- [32] Ji T, Lin Y, **Yang Y**, et al. Which performs better, the linear scanning or the KNN Searching Algorithm based on 2D grids?[C]//*The 3rd International Conference on Robotics, Automation and Intelligent Control (ICRAIC 2023)*. (Accepted)
- [33] Chen Z, Zheng H, Duan J, et al. GLCM-Based FBLS: A Novel Broad Learning System for Knee Osteopenia and Osteoporosis Screening in Athletes[J]. *Applied Sciences*, 2023, 13(20): 11150. (Acknowledgement)
- [34] Lin W, Lin Y, **Yang Y***. An approach for searching the top k nearest areas based on R-tree[C]//*The International Conference on Networks, Communications and Intelligent Computing (NCIC 2023)*. (Accepted)
- [35] Wu Y, Lin Y, **Yang Y***, et al. Top k nearest book searching approach in metaverse libraries based on R-tree[C]//*The International Conference on Networks, Communications and Intelligent Computing (NCIC 2023)*. (Accepted)
- [36] Wu Y, Lin Y, **Yang Y***, et al. Mining top k best libraries in metaverse with random access and sequential access[C]//*The International conference on Computer, Big Data and Artificial Intelligence (ICCBDAI 2023)*. (Accepted)
- [37] Ding W, Luo Y, Lin Y*, **Yang Y***, Lian S. VeriBypasser: An automatic image verification code recognition system based on CNN[J]. *Computer Communications*. (Accepted)
- [38] Chen Y, Wu A, **Yang Y**, et al. Efficient Verifiable Cloud-Assisted PSI Cardinality for Privacy-Preserving Contact Tracing[J]. *IEEE Transaction on Cloud Computing*. (Accepted)

Other Awards

- **National Gold Medal of 2012 National Outstanding Artistic Talents Student**
- The third prize of the 2022 Chang'an Cup Electronic Data Forensics Competition
- The third prize of the 2020 Meiya Cup Digital Forensics Competition
- The third prize of the 2020 "Greater Bay Area Cup" Financial Mathematical Modeling Competition
- The second prize of the 2020 Asia Pacific College Students Mathematical Modeling Competition (APMCM)
- The third prize of the 2021 College Mathematical Modeling Challenge (MathorCup)
- The national third prize and southern China's first prize of the 2021 WeChat Applet Developer Competition

- The second prize of the 2021 National Undergraduate Mathematical Modeling Contest Guangdong Provincial Competition
- The second prize of the 2021 Chang'an Cup Electronic Data Forensics Competition
- The second prize of the 2022 National College Student Data Analysis Popular Science Knowledge Competition
- The third prize of the 2022 Changan Cup Electronic Data Forensics Competition

Other Honors

- **2012 National Outstanding Artistic Talents Student**
- 2016 Three Outstanding Students of Qingyuan
- 2016-2017 Outstanding student leaders of Sun Yat-sen Memorial Middle School
- 2018 Outstanding Cadres of Zhongshan
- 2017-2018 Outstanding student leaders of Sun Yat-sen Memorial Middle School
- 2020 Outstanding Cadres of the Freshman Training Camp
- 2020 Outstanding Seniors of Jinan University in Freshman Training Camp
- Jinan's 5A Elite Students Program "Star of Entrepreneurial"
- 2022 Jinan University Winter Seminar "Excellent Team"
- Extraordinary Undergraduate Student Award ("Excellent in Mid-term Assessment")
- 2021-2022 Outstanding Communist Youth League Member of Jinan University
- Excellent Student Award of the First Training Course of Guangdong Digital Government Construction Talent Training Program
- Outstanding Student Award of "Loyalty, Faith and Respect Information Elite" Class (2021)
- Honorary Certificate of "Ten Years of Sharpening the Sword" of Xueqiangguo
- 2022-2023 Second-class scholarship for Jinan University graduating class
- Extraordinary Undergraduate Student Award ("Excellent in End-term Assessment")
- 2021 Outstanding Volunteers of Jinan University
- 2022-2023 New Oriental Education & Technology Group Outstanding Student Award