YIKE ZHANG

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SUMMARY

- Self-motivated graduate with excellent problem-solving and communication skills.
- Creative student who likes to take initiatives and seek out new challenges.
- Devoted to perform research of cutting-edge technologies.

TECHNICAL SKILLS

- **Programming Languages:** Python, Matlab, Julia, LaTeX, C, C++, etc.
- **Data Structures and Algorithms:** Lists, Sorting, Greedy Algorithms, Divide and Conquer, Dynamic Programming, etc.
- **Mathematics:** Abstract Algebra, Number Theory, Linear Algebra, etc. (GRE Quant sections: 167 out of 170)
- **Cryptography:** RSA, AES, DES, Digital Signatures, MAC and HMAC, Hash Functions, Identity-based encryption, etc.
- **Machine Learning:** Regression Algorithms, Regularization Algorithms, Decision Tree Algorithms, etc.
- **Data Science:** Generalization Bound, Approximation-Generalization Trade-off, study of the Overfitting, etc.
- **Computer Networking:** IP address, MAC, Domain Name Service (DNS), Dynamic host configuration protocol (DHCP), etc.
- **Parallel Programming:** Distributed memory programming with MPI, shared memory programming with openMP/Pthreads.

RESEARCH EXPERIENCE

Efficient Data Hiding in Encrypted Images via Multi-MSB Replacement 2019 - 2020

Lead author

- Developed and proposed a novel method on the reversible data hiding in the encrypted image field.
- Successfully increased the data embedding capacity in encrypted images.
- Preserved a high visual quality of reconstructed images or achieved a lossless recovery.
- Obtained better experimental results than other published state-of-the-art methods.

A Multi-MSB Replacement Based Approach for High Capacity Data Hiding in RGB images 2020

Lead author

- Developed a method for hiding messages in RGB images instead of embedding data in gray-level images.
- Demonstrated and proved our algorithm is ideal for embedding information in RGB images.
- Achieved significantly higher data embedding rate and also maintained a high image quality.
- Obtained better experimental results than other published state-of-the-art methods.

PUBLICATIONS

Y. Zhang and W. Luo. Efficient data hiding in encrypted images via multi-msb replacement. IEEE Transactions on Circuits and Systems for Video Technology, submitted., 2020.

Y. Zhang and W. Luo. A Multi-MSB Replacement Based Approach for High Capacity Data Hiding in RGB images. 2021 - 2021 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), submitted., 2020.

PROJECTS

Smart Home Remote Control System based on STM32 2019

Senior project

- Designed a remote control system with STM32, Python Django, and NLP (Natural Language Processing).
- Demonstrated the successful operation of the project functions such as the remote voice control of home lighting and humidity settings.

Monopoly Online Game 2020

Object-oriented analysis (OOA) and design project

- Developed a fully functionally Monopoly Online Game using Python and Kivy.
- Applied the core concepts of OOA into our project successfully.

WORK EXPERIENCE

Graduate research assistant 2019 - 2021

St. Mary's University *TX, USA*

- Presented research findings at peer-reviewed journals or professional conferences.
- Assisted professor with assigned research tasks.
- Produced weekly reports to the supervisor about my research progress.

Teacher assistant 2020 - 2021

St. Mary's University *TX, USA*

- Graded course assignments of undergraduate students.
- Tutored undergraduate students in C programming and Data Science.

API develop Intern 2018 - 2019
CG Land Inc. *Sichuan, China*
- Created and executed unit test plans.
- Assisted in scope definition, planning, estimation, and tracking.
- Managed and Maintained test interface portals installed by an external developer.

EDUCATION

St. Mary's University
Master of Science, Computer Engineering, 2019 - 2021 *TX, USA*
GPA 3.96 out of 4.0

Stanford University
Stanford summer visiting student, 06/2020 - 08/2020 *CA, USA*
- Participated in the CS229 Machine Learning class.
- Earned the credit 3.00 out of 3.00 and final grade CR (Credit) with certification.

Chengdu Neusoft University
Bachelor of Science, Computer Science and Technology, 2015 – 2019 *Sichuan, China*
GPA 3.64 out of 4.0 [*Top* 5%]

HONORS AND AWARDS

- 2019 - 2021 Full Graduate Research Assistantship, USA [*Full Scholarship + stipend*]
- 2019 Excellent undergraduate in Sichuan, China [*Top* 1%]
- 2018 National Endeavor Fellowship, China [*Rank:* 3/400]
- 2017 National Endeavor Fellowship, China [*Rank:* 9/400]

LEADERSHIP

The National Society of Leadership and Success 2019 – 2020
Member at St. Mary's University

MEMBERSHIP

IEEE Student Member