ZANXI RUAN

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EDUCATION

University of Verona **Verona, Italy**
PhD Candidate, Department of Medicine & Engineering for Medicine Innovation | Research with Prof.Marco Cristani
Oct.2024 – now
Research Interests**:** Computer Vision, Mutual-information Learning

National University of Defense Technology **Hunan, China**
Master of Management Science and Engineering | Research with Prof. Yingmei Wei Sept.2021 – June 2024
• Overall GPA: 3.3/4.0
Research Interests**:** Computer Vision, Few-shot Learning, Action Recognition

North China University of Technology **Beijing, China**
Bachelor of Digital Media Technology Sept.2017 – June 2021
• Overall GPA: 3.85/4.0 Rank: **1st/70**
Core Courses**:** Computer Graphics, Data Structures, Operating Systems

HONORS

• **Outstanding Graduates Awards** of North China University of Technology (**top 1%**) 2021
• **First Class Academic Scholarship** (**top 1%**) 2019,2020,2021
• National Scholarship Candidate 2020,2021
• Second Prize in the C/C++ Programming Competition (Beijing Division) of the Blue Bridge Cup 2019
• Second Prize in the National College Mathematical Modeling Competition (Beijing Division) 2019
• Second Prize in the National College Digital Media Technology Works and Creativity Finals 2019
• Second Prize in the National College English Contest 2018
• First Prize in the Graphic Design Category of the Blue Bridge Cup (Beijing Division) 2019
• Second Prize in the North China Five Provinces and Hong Kong, Macao, and Taiwan College Students Computer Application Contest 2019
• Third Prize in the Beijing College Students Digital Media Design Contest 2019
• The Freshman Second Prize Scholarship of the National University of Defense Technology 2021

PUBLICATIONS

[1] Hybrid Attentive Prototypical Network for Few-shot Action Recognition
Zanxi Ruan, Yingmei Wei, Yanming Guo, Yuxiang Xie,
Complex & Intelligent Systems(JCR Q1).
[2] Bank Card Number Identification Method Based on YOLOv3 and MobileNetv2[J] (*Published***)**
Cai Xingquan(supervisor), **Ruan Zanxi**, Sun Haiyan.
Journal of Computer-Aided Design & Computer Graphics, 2022 (**CCF A**)
[3] Bank card Number Identification System. ***Patent No***: 2020SR0704783.

INTERNSHIP EXPERIENCE

Huawei Cloud Computing Co., Ltd July 2023 – Present
Position: General software development engineer
- Mainly responsible for the front-end development of the cloud-native service platform and edge computing platform and the deployment and launch of docker containers.
- Including online deployment of cloud-native containers, optimization and packaging of components, UX design and development of the entire process from cloud product creation to release, and refactoring and optimization of project code.

State Key Laboratory of Beijing University of Posts and Telecommunications Jun 2020 – Sep 2020
Position: Algorithm R&D Engineer
- I was responsible for detecting and segmenting key information rows with minimal data, achieving the project's commercial viability.
- Developed an immersive ***BIM*** model experience project using ***UE4*** for virtual reality and participated in the organization and planning of government project investment throughout the entire process.

RESEARCH EXPERIENCE

Few-shot Action Recognition Dec 2021 – Present

- Proposed a novel few-shot action recognition algorithm, HYAN, which accurately classifies unlabeled videos into labeled video categories with extremely limited samples.
- Achieved ***state-of-the-art*** on three classic few-shot action datasets: Kinetics-100, UCF101, and HMDB51.

Undergraduate Graduation Project: Human body movement style transfer Oct 2020 – May 2021

- Extract the human body motion skeleton in the video, and use the adversarial generation network to fuse the style with the animation character motion skeleton.
- I built a display system based on three.js and bound the generated bvh skeleton to the model character.

A bank card number recognition system based on YOLOv3 and MobileNetV2 Oct 2019 – Dec 2020

- Proposed a method for bank card number recognition based on YOLOv3 and MobileNetv2 to address the low recognition rate and instability caused by factors such as complex backgrounds and lighting conditions.
- Improved data augmentation methods and optimized network structures to achieve a recognition accuracy of ***97.63%***.
- Built a one-step bank card number recognition platform using the Flask lightweight framework implemented in Python.
- Published in《Journal of Computer-Aided Design and Computer Graphics》

Beijing College Student Innovation Project -Immersive somatosensory adventure game Apr 2019 – Oct 2020

- Built the game scene on the Unity platform, recognized player fitness movements through Kinect, and triggered game scenarios.
- Designed and coded the Kinect pose recognition algorithm and the trigger event code.

Garbage Classification Application based on ResNet50 Jan 2020 – Sep 2020

- The application includes functions such as garbage classification through photo recognition, searching for classification, setting reminders for disposal, and identifying and reporting classification errors.
- Designed the application interface, collected and processed the recognition dataset, and designed and implemented the garbage recognition classification network.
- Achieved a recognition accuracy of 95.21% on the test dataset using the TensorFlow framework on multiple networks

SELECTED COURSES

Computer Graphics (A)	Data Structure (A)	Operating System (A)
Game Engine Development (A)	Multimedia Computing (A)	Discrete Mathematics (A)

TEACHING ASSISTANT

Visualization and visual analytics (Fall 2022) Sep 2020 – Jan 2021

- Instructor: **Prof. Yingmei Wei**
- Credit 2; Class: 74 juniors;

OTHERS

Programming: C#, C++, Go, JavaScript, Java, Python (Pytorch, Tensorflow)

Design: Ps, Pr

English: ***IELTS 7.0***