Guodong Chen

 github.com/be-Frozen ⚲ be-frozen.github.io

 No. 1, Wenyuan Road, Qixia District, Nanjing, China, 210023

☎(+86) 173-2778-8560 ✉ isguodong.chen@outlook.com

EDUCATION BACKGROUND

Nanjing Normal University, Nanjing, China   *Sept. 2020 - Jun. 2024 (expected)*
Bachelor of Science degree in Computer Science and Technology
Current GPA: 4.03/5.0 (90.27/100) Major Ranking: Top 2%

PATENT

Medical data visualization method based on histogram and nonlinear embedded transfer function, Patent No. CN116206735A, issued June 2023. Co-inventor.

RESEARCH BACKGROUND

Mini-Cloud Resource Managing System Development   *Jul. 2023 - Aug. 2023*
Online Project-based Learning (PBL), Interdisciplinary Research
Participant, Co-supervised by Prof. Maheswaran (McGill University) and Prof. Franchitti (New York University)

- Reviewed appropriate technical journals relating to Docker container concepts and familiarized myself with fundamental concepts such as instantiation and management;
- Created and managed a mini-cloud resource manager for 8 containers;
- Processed datasets comprising more than 1,000,000 records in cloud computing environments;
- Incorporated TensorFlow machine learning libraries to facilitate linear regression modeling of sample datasets.

Automated Hierarchical Object Detection Method for Fine Annotation of Subcomponents   *Sept. 2022 - Mar. 2023*
Nanjing Normal University, Nanjing, China
Research Assistant, Supervised by Prof. Fengyi Song

- Reviewed extensive academic literature concerning hierarchical object detection;
- Built a deep-learning model using Faster RCNN to analyze hierarchical data relationships between for object detection;
- Evaluated performance of the derived model in relation to the experimental physics dataset;
- Optimized the model by reducing small object missed detections and false alarms by 7% percent;
- Assessed small object detection performance specifications of the derived model, including latency, mAP, Quality of Experience, etc.

Interactive Visualization of Biomedical Data in Both Immersive Environment and XR   *Oct. 2021 - Sept. 2022*
Data-Driven XR Visualization Group, Nanjing Normal University
Research Assistant, Supervised by Prof. Richen Liu

- Developed an immersive virtual reality platform for medical diagnostics by converting computerized inspection reports into 3D medical volume data;
- Implemented advanced gesture-recognition technology and touchless control to manipulate angles and locations of volumetric medical data for visualization;
- Developed a system to enhance MR (Mixed Reality) medical diagnoses.

Interactive Multi-user Medical Visualization and Immersive Volume Rendering   *May. 2021 - Dec. 2021*
Data-Driven XR Visualization Group, Nanjing Normal University
Research Assistant, Supervised by Prof. Richen Liu

- Optimized and deployed ray-casting algorithm for immersive 3D environment medical volumetric data interpretation;
- Implemented a track seeding algorithm based on continuous scale space theory to facilitate 2D to 3D imaging migration;
- Generated 3D textures using the seeding algorithm subsequent to multi-user interactions;
- Tested multi-user rendering of 3D volumetric data in the derived immersive environment.

SELECTED PROJECTS

Cracking Wordle: Predicting Wordle Results

Resolution of Problem C, 2023 Mathematical Contest in Modeling (MCM)

- Developed Prophet, Multilayer Perceptron, and K-Means Clustering models to forecast future Wordle results by categorizing word difficulty to predict score results accordingly;
- Achieved rates of almost 90% in terms of predictive accuracy relatve to word difficulty;
- Designed an innovative Normal Distribution Principle Components Analysis algorithm to retain predictive model accuracy.

Agridentify: Agricultural Object Detection Model Based on PP-YOLOE+ and Copy-Paste

18th National University Student Intelligent Vehicle Competition

- Developed an agricultural object detection model using PaddlePaddle-YOLOE+;
- Trained the model using a dataset including 8 types of agricultural objects and a total of 4770 samples;
- Utilized copy-paste data augmentation to improve detection accuracy from 85% to approximately 95%;
- Achieved a top-10% ranking during the competition with an F1-score of 0.98913 (i.e., within 0.005 of the top ranked competing team).

VueForum: An electronic BBS forum with PHP front-end and Vue framework back-end

Team Leader, Software Engineering Course Project

- Developed a functional forum website with user interaction capabilities by implementing back-end Vue framework functions with integrated MySQL database access.

TEACHING EXPERIENCE

Teaching Assistant, *Machine Learning Course, Nanjing Normal University*   *Fall, 2023*

- Hosted weekly Lab classes and offered guidance to students.
- Graded weekly assignments and designed problems for exams.
- Mentored and motivated students to participate in various machine learning competitions.

Assistant Mentor, *School of Computer and Electronic Information, Nanjing Normal University*   *Sept. 2021 - Jun. 2023*

- Supervised students during evening self-study sessions.
- Provided guidance to students in learning C language as a programming assistant.

HONORS & AWARDS

Meritorious Winner, 2023 Mathematical Contest in Modeling	*May. 2023*
First Prize, Feng Ruer Scholarship, Nanjing Normal University	*Apr. 2023*
Technology Star, Nanjing Normal University	*Mar. 2023*
First Prize, Excellent Student Scholarship, Nanjing Normal University	*Nov. 2022*
Third Prize, China Collegiate Mathematics Competition, Jiangsu Division	*Nov. 2022*
Third Prize, China Collegiate Computer Design Contest	*Aug. 2022*
Merit Student, Nanjing Normal University	*2022*

SELECTED COURSES

Linear Algebra, Java Programming, Compiler Principles, Deep Learning and Pattern Recognition, Computer Organization and Architecture

TECHNICAL SKILLS

Programming Languages:	C/C++, C#, Java, SQL, Python, JavaScript
Tool-kits and Frameworks:	Matlab, Unity, OpenGL, Vue, Git