Vicky W. X. Hu
M.S. in Management Information Systems & M.S. in Data Analytics

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SUMMARY

Expert in Artificial Intelligence and Deep Learning with 3+ years of experience in machine learning, medical imaging, and smart agriculture, including developing CADe/x systems for colon cancer detection and recommendation systems. Proficient in working with the **National Science and Technology Council and Industrial Technology Research Institute**. Skilled in Python, C, SQL, TensorFlow, PyTorch, and AWS. Experienced in object-oriented programming, unit testing, and frontend development.

No sponsorship required.

EDUCATION

Concurrent International Graduate Program

Master of Science, Data Analytics 2024
Kansas State University, Manhattan, Kansas, USA

Master of Science, Management Information Systems 2024
National Chiayi University, Chiayi, Taiwan

Bachelor of Science, Management Information Systems 2022
National Chiayi University, Chiayi, Taiwan

EXPERIENCE

Software Engineer Intern Chiayi, Taiwan**,** 05/2021-01/2025

National Science and Technology Council

- Applied **SRGAN** to enhance image quality and utilized **Mosaic data augmentation** along with an adjusted **YOLOv7** architecture to improve polyp classification accuracy from 72.8% to 90.4%.
- Developed an **automatic annotation system** that reduces image labeling time from 36 minutes to 18 seconds.
- Used conditional **GANs** to generate additional polyp images for **YOLO** training, expanding the dataset by 66.7% and enhancing polyp detection capabilities.
- Employed **DeblurGAN-v2** for motion-blurred image restoration, leading to an increase in detection performance with accuracy rising from 25.64% to 30.74%.
- Trained the model using **PyTorch, TensorFlow, and Darknet**, adjusted YOLO parameters, and compared results.

Algorithm Engineer Intern Chiayi, Taiwan, 06/2023-01/2024

Industrial Technology Research Institute

- Developed a **Recommendation System** using **Neural Collaborative Filtering, Matrix Factorization, and Multilayer Perceptron** with **Agile Development**.
- Utilized **Python-Boto3 for data acquisition**, focusing on click and stay time data, ensuring seamless **data pipeline integration within the SDLC lifecycle**.
- Implemented **TF-IDF** to extract key product features, leveraging **cosine similarity** for similarity measurement and improving **computational efficiency**.
- Processed data with **Pandas and Scikit-Learn**. Applied **Box-Cox transformation** to align the data with a normal distribution, improving the NDCG performance of the MLP model for webpage stay times from 55.7% to 84.3%. Implemented exponential decay to account for time-based user interests, enhancing model learning.
- Achieved over 99% accuracy with the **Random Regression Forest** model across various decay intervals. Integrated **AWS Lambda, S3, and EC2**, ensuring **CI/CD integration** for A/B testing and automated deployments.

Computer Instructor Chiayi, Taiwan, 09/2023-01/2024

Chia Hwa Senior High School

- Led a class of 80 students in exploring coding, specifically in **C programming**, fostering critical thinking and problem-solving skills. **Provided guidance** and support to **encourage independent problem-solving**.
- Responsibility: Prepared students for the APCS exam and programming competitions.

Teaching Assistant Chiayi, Taiwan, 09/2022-06/2023

National Chiayi University in MIS

- Assisted students by solving their problems, including **Java debugging code**, explaining terms, clarifying logical theories, and project production discussion.
- Course Name: Object-oriented programming and Operating System

Administrative Assistant Chiayi, Taiwan, 09/2020-06/2023

National Chiayi University in MIS

- Lead the team in the renovation of the department in MIS website, following **Agile** development with weekly sprints to enhance UI/UX and performance.
- Developed the website frontend with **HTML, CSS, and JavaScript**, enhancing the design using **Bootstrap 4**.
- Track **GA4** performance, enhance **GSC**, and regularly report results to supervisors.
- Focused on **accessibility** and implemented **SEO** strategies, achieving 7.35K exposures in January 2023 and a total of 140K exposures from October 2022 to October 2023.

SKILLS

- Programming Languages: Python, R, Java, C, SQL, Bash/Shell, HTML/CSS, PHP, JavaScript, Kotlin, VB.NET
- Tools: Git, GitHub, Spark, Hadoop, MySQL, Docker, AWS (Lambda, S3, EC2), PuTTY, Tableau, SPSS, Selenium
- AI Frameworks: Tensorflow, Keras, Darknet, scikit-learn, Pytorch
- Languages: English, Chinese (Traditional)

VOLUNTEER AND LEADERSHIP

- The Mandarin tutorial for YOLOv7 is the top search result on the engine with 3.6K views on Medium.
- The article *"When Does a Computer Randomly Shut Down and Restart?"* reached 7.8K views on Medium.
- Interviewed about the development of a colon cancer detection system with Da-Ai Television in December 2023.
- Acted as a reception ambassador for Study Abroad Program to Taiwan from K-State in March 2023.
- Acted as a reception ambassador for the International Conference on Information Management in December 2020.
- Acted as a coordinator for the 112th NCYU MIS Freshmen Orientation Camp for 70+ participants in 2019.

PUBLICATIONS

- MDPI 2023: A Novel Computer-Aided Detection/Diagnosis System for Detection and Classification of Polyps in Colonoscopy **(IF: 3.0, Q1)**
- TANET 2022: A Study on the Detection and Classification of Colorectal Polyps Using an Assisted Annotation System
- ICBEM 2023: Study of User Behavior and APPs Recommendation System
- ICBAI 2024: Research on the Application of Super-Resolution Imaging in Computer Aided Detection and Classification of Colorectal Polyps