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Experiences

TSMC Inc.; Tainan City, Taiwan *(2022.09 –)*

Machine Learning Engineer

- Wafer Map Analysis *(Denoise Preprocessing, Unet, Contractive Learning, Unsupervised Clustering, Spotfire)*
  - Designed and implemented a pipeline for data loading, processing, clustering, and visualization, with integrated denoise method by user domains.
  - Leveraged a UNET model with contrastive learning for clustering of particles and defect maps.
  - Presented results through a Spotfire dashboard, enhancing accuracy validation and user engagement.
  - Reduced working time by 40 hours per day in a single fab.

- Litho Chart Diagnosis *(Factory Pattern, Exception Handle, Llama3-70b, Prompt Engineering, Spotfire, Power BI)*
  - Designed a data loading pipeline using the factory pattern to integrate 20 data sources with over 1175 features.
  - Developed three analysis methods to identify root causes of bad charts and implemented error codes to simplify issue tracing, reducing log clarification time from 1 hour to zero for each fab/case.
  - Integrated the data loading pipeline and analysis methods into tools with a Large Language Model agent, and developed prompts for each tool to enhance user engagement.
  - Cut process time from 5 hours to only 10 minutes per day.

Acer Inc.; New Taipei City, Taiwan *(2021.07 – 2021.09)*

Research Development Intern

- Autostereoscopic 3D Displays *(Yolov4, Image Processing)*
  - Implement the kernel pipeline to automatically detect 3D-enabled screens without manual switching enhance user experiment.

Industrial Technology Research Institute; Hsinchu, Taiwan *(2020.09 – 2021.07)*

Research Assistant Intern

- Desktop Assembly Verification *(Faster RCNN, Image Processing)*
  - Leveraged deep learning & image processing to assist operators in verify installation process.

National Cheng Kung University; Tainan, Taiwan *(2020.09 – 2022.08)*

Research

- Attentive Region Assignment Mix for Few-Shot Classification *(Data Augmentation, Few-Shot Learning)*
  - Proposed a new architecture that utilizes spatial feature representations to generate new samples, thereby increasing data diversity.

Certifications

Coursera Credential: Convolutional Neural Networks, Improving Deep Neural Networks, Sequence Models, Data Science, Machine Learning, Neural Networks and Deep Learning

Education

Master in Institute Manufacturing Information and System, National Cheng Kung University, Taiwan *(2020 – 2022)*

Courses: Computer vision, Image Processing and Deep Learning, Introduction to Artificial Intelligence, Data Science & Artificial intelligence

Bachelor of Mathematics, National Kaohsiung Normal University, Taiwan *(2015 – 2019)*

Courses: Data Structure, Probability and Statistics, Numerical Analysis, Computational Science

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