**Professor Chia-Yu Hsu (許嘉裕)**  
Research Projects

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| **Projects funded by the Ministry of Science & Technology** (since Aug 2022 National Council of Science and Technology) | |
| Years |  |
| ?? | Big Data Analytics and Manufacturing Intelligence: Model Constructions and Applications |
|  | Deep Learning and Empirical Study for Defect Classification, Anomaly Detection and Predictive Maintenance |
|  | Cyber-Physical Intelligent Diagnosis, Augmented Reality, and Predictive Maintenance System |
|  | Consortium for High-tech Industry Big Data Analytics, Intelligent Manufacturing, and Digital Decision Technologies |
|  | Constructing Equipment Time-series Data Analytics and Modeling for Enhancing Equipment Intelligence |
|  | Research on Transfer Learning and Small Data Learning for Smart Manufacturing |
|  | Deep Learning for Smart Manufacturing |
|  | End-to-End solution and service system development for Smart Manufacturing and Innovation Business Development |
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| **Projects Industry-Academy Cooperation** | |
| Years |  |
| ?? | Deep Learning for Defect Inspection with Small Data Overlay Prediction and Compensation in Lithography Processes |
|  | Virtual Metrology and Compensation Optimization in Physical Vapor Deposition Processes |
|  | System Development for Overlay Error Sampling Strategy and Variation Compensation |
|  | Optimization of Overlay Error Compensation |
|  | Deep Learning for AOI Defect Detection |
|  | Deep Learning for Fault Detection and Equipment Health Management |
|  | Anomaly Detection of Wave Pattern in Oscilloscope |
|  | Artificial Intelligence for AOI defect Classification in Printed Circuit Board Manufacturing |
|  | Convolution Neural Network for Defect Classification |
|  | Development of Artificial Intelligence Methodology. Digital Analysis and Prediction for Smart Production in PCB Industry |
|  | Intelligent Manufacturing and Big Data Analytics for Yield Enhancement in Optical Film Processes |
|  | Manufacturing intelligence and Big Data Analytics for Improving Yield of Sound Device |
|  | FDC Data Mining for Prediction Model and Tool Performance Monitoring |
|  | Method for Intelligent Similarity Matching of Wafer Bin Map |
|  | Develop IC Engineering Data Analysis System to Improve Virtual Vertical Integration Model of Supply Chain in Semiconductors |
|  | Manufacturing Intelligence and Data Mining for Yield Enhancement in Semiconductor Manufacturing |
|  | Research on Optimizing Information Value of Production Decision for Semiconductor Manufacturing |
|  | Research on Studies for Determining Machine Subgroups to Enhance Yield in Semiconductor Manufacturing |
|  | Advanced Process Control for Critical Dimension and Overlay Error Compensation |