

Chia-Yuan Wu

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EDUCATION

Lehigh University

Ph.D. in Industrial and System Engineering (GPA: 3.83/4)

Aug. 2022 - Present

Bethlehem, PA, USA

National Chiao Tung University

M.S. in Industrial Engineering and Management (GPA: 4/4)

Sept. 2015 - Jul. 2017

Hsinchu, Taiwan

National Chiao Tung University

B.B.A. in Management Science (GPA: 3.7/4)

Sept. 2011 - Jun. 2015

Hsinchu, Taiwan

TECHNICAL SKILLS

Programming Languages: C#, Python, PL/SQL, T-SQL, Matlab

Database Management Systems: Oracle, SQL Server, MySQL

Optimization Software: CPLEX, GLPK, AMPL, Gurobi

AI Tools and Other Technology: PyTorch, scikit-learn, Pandas, Numpy, ASP.NET, VSTO, Git, Microsoft Office, \LaTeX

WORK EXPERIENCE

Advanced Micro Devices, Inc. (AMD)

Apr. 2021 - Jul. 2022

Software System Designer

Hsinchu, Taiwan

- Optimized and integrated SCM and S&OP processes using advanced analytic techniques, boosting system efficiency (Kinaxis RapidResponse)
- Developed a unified data feed solution to automate various supply chain operations (MSSQL, C#, VSTO)
- Collaborated with cross-functional teams to manage multiple tasks concurrently, demonstrating flexibility and initiative in integrating GPU and CPU planners for enhanced system performance

AU Optronics Corp. (AUO)

Sept. 2017 - Apr. 2021

Senior Software Engineer

Hsinchu, Taiwan

- Engineered and deployed MIP models and optimization algorithms for user needs (IBM CPLEX, C#, PL/SQL)
- Crafted a seamless end-to-end system architecture from core to UI, improving reliability (VSTO, ASP.NET)
- Facilitated precise communication to align system specs with strategic business objectives
- Showcased strong problem-solving and data analysis skills, focused approaches in project execution IT operations

SELECTIVE INDUSTRY PROJECTS

Available-to-Promise Pegging Optimization

Sept. 2020 - Mar. 2021

AU Optronics Corp. (AUO)

- Transformed bill-of-material structure and business requirements into a robust mathematical programming model
- Engineered a system integrating data processing, advanced optimization models (MIP), and UI design
- Enhanced inventory management with advanced optimization, doubling order success rate, increasing component availability, and reducing buyer workload by 95%

BEOL WPS Scheduling

Sept. 2019 - Dec. 2019

AU Optronics Corp. (AUO)

- Led a 3-member cross-functional team in math programming to replace rule-based scheduling with MIP models
- Demonstrated inclusive teamwork and effective communication
- Enhanced efficiency by reducing operational time by 90%

PUBLICATIONS

[1] **Chia-Yuan Wu***, Frank E. Curtis, and Daniel P. Robinson. Using Synthetic Data to Mitigate Unfairness and Preserve Privacy through Single-Shot Federated Learning. *Preprint in review*, 2024. ([arXiv](#))

- Developed an innovative framework using synthetic datasets to mitigate unfairness, preserve client privacy and reduce communication costs in federated learning (Python, PyTorch, MySQL)
- Leveraged bilevel optimization and data distillation to address fairness during client learning, allowing the server to train a standard ML model using only synthetic data, with only one-shot client-server communication

CONFERENCES

- Enhancing Fairness in Machine Learning through Training Synthetic Datasets in Multi-Client Scenarios. *MOPTA 2024*, Bethlehem, PA, August 2024.