Bo-Wei Lu

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Summary

Proficient in C++, Python, Web, Android and iOS DevOps

Hands-on experience with OOAD, Agile Software Development and Design Patterns

Outstanding communication skill, self-disciplined, self-motivated in various environment

Personal Website: zxspring21.github.io

Education

M.S. Computer Science, National Central University, Taiwan, GPA: 3.36 ***Sep. 2015 – Aug. 2017***

B.S. Computer Science, National Kaohsiung University of Applied Sciences, Taiwan, GPA: 3.48 ***Sep. 2011 – Jun. 2015***

Experience

Test R&D Engineer, TSMC TRDD, Taiwan ***Apr. 2024* – Present**

Project: Adaptive testing, Machine learning and Infrastructure development

- Developed a platform-adaptable STDF analysis tool with data visualization and machine learning for distributed, parallel, and edge computing; enabled AI EDA for smart factory automation.
- Develop AutoML to automatically select algorithms, optimize parameters, perform feature engineering across various datasets, evaluate with a confusion matrix, and AutoTTR for real-time bypass of never-fail patterns.
- Integrated real-time edge computing and ML analytics for TSMC. Built GPU/NAS servers with MLOps for AIaaS, linking NCE, KLA, Inline, CP, and FT data to train DieOfInterest ML models, optimizing CoWoS/3DFabric production, reducing DPPM, and cutting costs.

Test Program Development Engineer, TSMC TPDD, Taiwan ***Feb. 2023* – Apr. *2024***

Project: Testing Program R&D & Infrastructure & Automation development

- Developed test programs, analyzed CPU, GFX, and SOC DFT designs, covering BIST, SCAN, JTAG, IDDQ, Speedo, and Shmoo tests.
- Develop real-time monitor systems, tip burnt prevention, pattern compiler, Autogen, and Dib checker program.
- Used statistical and big data analytics with AI and cloud computing to develop pChart and AIwaferMap for outlier detection. Built an intelligent wafer analysis platform integrating k8s, Flask, RESTful/gRPC, and genAI to implement process optimizations.

Test ProbeCard R&D Engineer, TSMC TPCD, Taiwan ***Nov. 2020* – Feb. *2023***

Project: Probe card R&D & Simulation & Assembly & Maintenance

- Developed probe cards for AP, HPC, RF, and PMIC, ensuring a reliable NPI-to-MP process with supply chain collaboration.
- Circuit design layout and signal integrity analysis, SI/PI simulation for optimal signal integrity, reducing interference, mechanical and thermal simulations, and minimizing signal reflection through SI optimization.

Software R&D Engineer, HTC RIL, Taiwan ***Dec. 2017 – July 2018***

Project: Android Radio Interface Layer (RIL) and Network Core architecture development

- Develop Android RIL, Wireless communication protocol, network protocol, kernel network driver, Blockchain mobile development
- HTC U11 and U12 Android smartphone projects development, codebase upgrade and maintenance

Management Information System Engineer, National Central University General Affairs ***Sep. 2015 – Aug. 2017***

Project: Managing online-reservation system and planting on campus system in Linux servers

- Utilized full-stack development and optimized RDBMS and MVC architecture for scalability in the school system, improved RWD, SEO, UX, and compatibility, and resolved information security issues.

Statistical Researcher Intern, Institute of Statistical Science Academia Sinica, Taiwan ***Jul. 2015 – Aug. 2015***

Project: Statistical conference seminar

- Statistics in Machine Learning(supervised/unsupervised learning, etc.) and Big Data research and application
- Utilized data mining(clustering, classification, regression) and statistical theories(ANOVA, Chi-squared test) for data visualization

Achievement

- Develop high CCC MEMS probe card of N5 CoWos test, TSMC 2023 APTS Contribution Award ***Jan. 2023***
- High pin count and high CCC MEMS probe card develop for CoWos pad probing, TSMC APTS Contribution Award, Taiwan ***Jul. 2022***
- Certificate in Application Processor Design, 49th IEEE/ACM Microarchitecture Symposium Taiwan ***Oct. 2016***
- Merit award in medical science statistical contest, Academia Sinica, Statistics Institute, Taiwan ***Jul. 2015***
- Third in the National Technical Competition, Taiwan ***May 2011***

Publication

Bo-Wei Lu, "Obstacle detection and collision avoidance for multi-copters," in Proc. National Central University Electronic Theses & Dissertations, Aug, 2017.