Chuck Yin

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Industry Experience

2016.04-present   Automation Engineering Lead   Facebook

- Develop and execute automation strategic plans to optimize cost, quality, capacity, delivery for new product builds. Engage with contract manufacturing partners and fixture/equipment vendors to develop, bring up and ramp automation stations for the fully automated visual inspection and calibration of VR product.
- Architect the manufacturing test software to enable one template for all vision related core-IP manufacturing stations.
- Instrumentation design to invent the ad-hoc equipments to meet the VR display measurement and calibration. Designed equipments are landed in manufacturing line to collect and calibrate per unit panel data in subpixel resolution.
- Integrate the advanced transportation belt technology to realize the fully automated line (6 stations) on table. Optimized space and operators and enable the smart flow control.

2014.02-2016.04   Sr. Manufacturing Testing Lead   Square

- Layout the manufacturing line for new payment hardware product and comply with multiple payment standard including Apple pay. Optimize the existing free hardware manufacturing line and minimize the per unit production cost from 5$ to 3$.
- Collaborate with security team to implement per unit encryption at chip and PCB board level to make sure the payment is secure and reduce the fraud rate to 1 ppm.
- Build the full manufacturing line software repository (<200MB) to drive the full line, including SMT and FATP and packaging, totally 12 stations.

2010.12—2014.02   Sr. Display Hardware Tech Lead   Apple

- Instrumentation design to achieve the simultaneous measurement of spectrum, imaging and flicker to meet optimum balance of accuracy, speed and data completeness.
- Build the artificially vision subjective lab to integrate the cognitive vision, machine learning to improve the automated display test station to human eye level.
- Bring up the display testing automation station for iphone, ipad and ipod touch displays at Foxconn, Pegatron, CSMC, Quantum including the equipment setup, fixture, algorithm, automation scripts and final implementation to meet mass-production requirements. iPad/iPhone LCDU station(light leakage, yellow mura), RGBW station(white point and gamma calibration). Hyperspectral imaging colorimeter station.
- Manage/drive multiple international equipment vendors including Konica Minolta, Instrument Systems, Radiant Vision Systems, Westar, Gooch and Housego, Hanzhou Sensing, Evarstar. Manage/drive fixture vendors: Todtech, Innorev, Myzy, Bojay, Intelligent Automation, Boozhong.
- Represent Apple for display testing to participate display metrology committee and draft display design and test standards.

2008.01—2010.12   Research Scientist   Qualcomm

- MEMS Research and Innovation Center member to conceptualize the gesture based user interface of Ebook application.
- Design, test and perform root cause failure analysis of the MEMS reflective display. Manage 100 virtual machines and perform the non-imaging ray-tracing simulation.
- Develop emerging technologies including transparent solar window, color coded 2D/3D human machine interface. The solar window project wins the No.1 Prize in Qualcomm new idea innovation prize for 2013 and
- Design and implement 4 primary (RGBW) imaging system instead of the traditional 3 primary color RGB system. The brightness increased 50% with same power consumption.

Education

2001—2006   Ph.D. Systems Engineering (Samsung Fellowship)   Kent State Univ.
1997—2001   B.S. Systems Engineering   Beijing Normal Univ.

Committee

2014 - Present   Society of Informational Display Committee Member.
2014 - Present   International Conference on Display Technology Committee Member

Patents

1. Imaging method and system with angle-discrimination layer US8970767 B2, US20120327288 A1
2. Light collimating manifold for producing multiple virtual light sources US 20130135358 A1
3. Microstructures for light guide illumination US20110025727 A1
4. Gesture-responsive user interface for an electronic device US 20130135188 A1
5. Photovoltaic window with light-turning features US20130118547 A1
6. Optical touch device with pixilated light-turning features US20150205443 A1
7. Light direction distribution sensor US 20130169606 A1
8. Displays and Temperature Adaptive Display Calibration US20140028858 A1
9. Parallel sensing configuration covers spectrum and colorimetric quantities with spatial resolution US9076363 B2
10. Directional Light Sensors US 9582083 B2
11. Imaging pipeline for spectro-colorimeters US20140300753 A1
12. Method and apparatus for display calibration US8890908 B2
13. Methods and systems for cloud computing to mitigate instrument variability in a test environment US 20140074421 A1
14. Homeotropic and hybrid bulk alignment of lyotropic chromonic liquid crystals US 8704977 B2
15. High accuracy imaging colorimeter by special designed pattern closed-loop calibration assisted by spectrograph. US8988682 B2
16. Imaging Sensor Array Testing Equipment US9176004

Academic Achievement

1 book chapter. Over 60 publications; including 12 journal publications (2 Phys Rev Lett, 1 Phys Rev E, 1 J. Appl Phys, etc) and over 50 conference publications.