Chongchang Mao, Ph. D.

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SKILL SUMMARY

- Outstanding leadership experience in optical communication system and key component development, including strategic planning, project management, and product commercialization.
- Strong R&D experience and knowledge in telecom networks, free-space optics, ASIC design, liquid crystal modulator, and biomedical photonics.
- A successful track record in managing multiple complex projects with critical deliverables and demanding expectations, while under strict scope, schedule, and resource constraints.
- Excellent R&D team building and training skills with a successful track records in developing technologies and products for wide applications.
- Adept in planning, budgeting, staffing, coaching, and coordinating cross-functional teams for optimal performance.
- Strong leadership experience in early stage technology commercialization, including conducting technology due diligence, managing initial technology development, and implementing commercialization plans.

EDUCATION

- **Ph. D. (1989)** in Electrical and Computer Engineering, University of Colorado at Boulder.
- **M. S. (1985)** in Optoelectronics, Institute of Optics and Electronics, Chinese Academy of Sciences, China.
- **B. S. (1982)** in Optics, Wuhan University, China.

PROFESSIONAL EXPERIENCE

Director of Free-Space Optics Department / Sr. Principal Engineer (4/2012 – 12/2019)

Futurewei Technologies, San Jose, CA

- Established a new R&D department of optoelectronics that worked on optical system and component development for telecom networks, including reconfigurable Add/Drop multiplexer (ROADM), wavelength selective switch (WSS), optical cross switch, etc.
- Led the team to successfully develop and commercialize a series of advanced WSS products that can generate revenues greater than $50M/year. Based on the developed platform technology, the team has started developing high port count WSS and AdWSS systems.
- Established key platform technologies for liquid crystal on silicon (LCOS) modulator development. The team has successfully developed the first generation of LCOS modulators and initiated the development of second generation of LCOS modulators for WSS and display applications.
- Provided technical consulting services for other R&D departments, including new technology evaluation, problem identification, and development guidance.

Chief Technology Officer and Director of Board (8/2003 – 3/2012)

Southeast TechInventures, Inc. (STI), Durham, North Carolina

- Led a multi-functional team including technical, business, and consulting experts to access university breakthrough technologies and translate these technologies to industry through obtaining funds from

government agencies, strategic partners, and private investors. The provided leadership resulted in multi-million dollars of government grants and more than 5 new startups (spin-off companies).

- Organized the due diligence on university technologies, and successfully accessed technologies in the fields of optoelectronics, micro-display, optical telecommunication, biomedical test, nanotechnology, clean and renewable energy, pharmaceutics, and informatics.
- Successfully obtained and managed multiple government grants, including project planning, staff hiring, milestone tracking, resource coordination, budget control, results reporting, and risk management.
- Led commercialization plan development by working with MBA students from Duke University, North Carolina State University, and University of North Carolina.

Engineering Director/Principal Engineer (10/1997 – 7/2003)
Chorum Technologies Inc., Richardson, Texas

- Established and Led R&D and production teams to develop and manufacture liquid crystal based optical components and subsystems for telecom networks, including variable optical attenuator, optical switch module, optical spectral equalizer, polarization combiner and controller, optical performance monitor, and wavelength blocker.
- Defined multiple products in a short period of time based on the analysis of market requirement, competition landscape, company expertise, development cost, and time to the market. The team successfully developed several products that were used in worldwide optical networks.
- Effectively coordinated activities for engineering, production, qualification test, purchasing, marketing/sales, and customer technical support.

Manager/Senior Staff Engineer (07/1997 – 09/1998)
Applied Simulation and Modeling Research, MOTOROLA, Schaumburg, Illinois

- Designed the architecture of free-space optical interconnection systems and developed approaches to integrate optoelectronic devices to systems.
- Designed and tested CMOS chips, including current drivers for vertical-cavity-surface-emitting-lasers (VCSEL), amplifiers for photo-detectors, and interface circuits between computers and optoelectronic systems.

Research Scientist (1989 - 1997)
Center for Opto-electronic Computing Systems, University of Colorado at Boulder, Colorado

- Designed, assembled, and tested a high resolution optical phase conjugate scanning microscope that had much higher spatial and phase resolution than alternatives.
- Designed, assembled, and tested several liquid crystal on silicon (LCOS) phase modulators and optically addressed amorphous silicon/LC spatial light modulators.
- Designed, fabricated, and tested several CMOS chips for micro-display, optical CROSSBAR-switch and optical counters.
- Developed dynamic hologram technology using photorefractive crystals and liquid crystal devices, automatic focusing system for biomedical imaging systems, and optical correlators for moving object tracking.
- Supervised graduate students for their research projects in areas of VCSEL application, liquid crystal modulators, free space optical interconnects, and modern optical design.