

KENNETH SCOTT KUBALA

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OBJECTIVE

Obtain a position where I can apply my personal drive, creativity, and leadership to further advance the state of optical technologies.

ACADEMIC BACKGROUND

Current	UNIVERSITY OF COLORADO <i>PhD in Electrical Engineering with a strong emphasis in Optics</i> Expected in Dec. 2001. Current GPA 3.7/4.0.	Boulder, CO
December 1999	UNIVERSITY OF COLORADO <i>Masters of Science in Electrical Engineering with a strong emphasis in Optics</i> GPA 3.7/4.0.	Boulder, CO
December 1995	UNIVERSITY OF ARIZONA <i>Bachelor of Science in Optical Engineering</i> Magna Cum Laude, Cumulative GPA of 3.7/4.0	Tucson, AZ

PROFESSIONAL EXPERIENCE

7/97 - Present	UNIVERSITY OF COLORADO Research Assistant working on the design of a variable addressability electronic binocular system. This project involves the design of non-conventional optics that when used in conjunction with a CCD array and a miniature display yield an image that has a variable resolution. This variable resolution image is matched to the visual acuity function of the eye. By doing this information efficient transformation one can increase the field-of-view of a binocular system without any perceivable degradation in image quality.	Boulder, CO
6/14/00 – 6/15/00 4/11/01 – 4/12/01 11/14/01 – 11/15/01	THE COLORADO ADVANCED PHOTONICS TECHNOLOGY CENTER Instructor of a two day short course titled “Introduction to Optical Systems” at the Colorado Advanced Photonics Technology Center.	Denver, CO
8/96 – 7/97	UNIVERSITY OF COLORADO Research Assistant working with precision alignment and tolerance measurements of micro optical holographic elements for their use in a fiber optic bi-directional data link. Teaching assistant in charge of the senior level undergraduate optics laboratory and the circuits I laboratory.	Boulder, CO
6/95 - 8/95	UNIVERSITY OF COLORADO National Science Foundation Research Grant for Undergraduate Study at the Optical Computing Systems Center. Project involved the design and production of a computer driven vertical-cavity surface-emitting laser (VCSEL) array as well as research in determining applications in imaging systems. Project concluded with the publication of the final report.	Boulder, CO

- 8/94 - 11/94 **UNIVERSITY OF ARIZONA** **Tucson, AZ**
- Motorola Grant involving the design, characterization and optimization of the next generation power steering rate/position transducer. This entailed redesigning the current device, and characterizing LED's emitting in the infrared, as well as Schmidt photo detectors sensitive in this region. The final stage included optimization of the optical design using commercial lens design software.
- 6/94 - 8/94 **UNIVERSITY OF COLORADO** **Boulder, CO**
- National Science Foundation Research Grant for Undergraduate Study at the Joint Institute for Laboratory Astrophysics. Research included frequency tripling a dye laser using Xenon and measuring the effects of broadening in Acetylene as a function of pressure. In depth knowledge of a seeded Optical Parametric Oscillator and various frequency locking schemes was necessary to accomplish the second experiment.
- 6/93 - 11/93 **WYKO CORPORATION** **Tucson, AZ**
- Engineer and Research Assistant involved in assisting in the design and building of optical prototypes of non-contact surface profilers, performing comparative analysis between current and new products, specific customer measurements, and providing feedback and recommendations for state-of-the-art products.

COMPUTER AND EQUIPMENT SKILLS

- **Languages:** C, FORTRAN, BASIC, HTML
- **Software:** Matlab, Zemax, Oslo6, CodeV, TracePro, Mathematica, Spice, Electronics Workbench, Microsoft Office
- **Systems:** Sun/UNIX, PC/DOS, Windows
- **Optical Hardware:** All Wyko equipment (RST, Magnetic Head Testers, Optical Surface Profilers, AFM, etc.), WaveFront Sciences Shack-Hartmann wavefront sensor, Optical test equipment (nodal slides, collimators, shear plates, spatial filters, resolution targets, etc.) Grating and prism spectrometers, Lasers (HeNe, laser diodes, Argon ion, Nd:YAG, Ti:Sapphire), Mach-Zehnder and Michelson interferometers, Photography and holography exposure, development and printing equipment, Optical spectrum analyzers, Optical power meters, Photorefractive and non-linear materials, Polarizers, Wave plates, Optically addressed spatial light modulators, Optical time domain reflectometer, Bit error rate tester
- **Other Hardware:** Electronic equipment (O-scopes, voltage sources, current sources, multimeters, etc.), Machining equipment (mill, lathe, etc.), Thermo electric coolers

PUBLICATIONS AND PATENTS

- United States Patent: Patent Number: 5,982,549. "Ultra-Wide Field Viewing System".
- "Investigation into Variable Addressability Image Sensors and Display Systems", Kenny Kubala, A. Hatch, L. Lewis, R. B. Hooker, *Society for Information Display Conference Proceedings*, Vol. XXIX, pp.415-418. May, 1998.
- "Increasing the Field of View of an Electronic Imaging System Using Variable Addressability", Kenny Kubala, R. B. Hooker, *Society for Information Display Conference Proceedings*, Vol. XXXI, pp.629-631. May, 2000.
- "A Variable Addressability Binocular System," *Society for Information Display Conference Proceedings*, Vol. XXXII, pp.606-609. June 2001.
- "A Variable Addressability Electronic Binocular System," *Applied Optics*, to be published February 1st 2002.

HONORS

- Best Student Paper - SID '98
- Deans List - Magna Cum Laude
- Golden Key Honorary Society
- Nugent Scholarship (1991 - 1995)
- Eagle Scout
- Founding member of the University of Colorado student chapter of the Optical Society of America
- Student member of the Optical Computing Systems Center (OCS)
- National Science Foundation Grants - 1994, 1995
- University of Colorado - Fellowship 1996, 1997
- Winner of the "Commendation" award at the Acoustical Society of America 2000 Loudspeaker Student Design Competition.