

YOUNG BASILE



Michael Cantara, PhD

Technology Specialist

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Practice Areas

Patent

Industries

Consumer Electronics
Electronics & Semiconductors
Information Technology
Quantum Technology

Education

Massachusetts Institute
of Technology,
Ph.D. in Physics, 2022

University of Connecticut,
M.S. and B.S. in Physics,
Summa Cum Laude, 2016

Dr. Cantara currently supports the firm's patent prosecution services as a member of the quantum technologies team. He works closely with inventors in the areas of quantum computing, communications and sensing, lasers, optics, circuits, machine learning, and related fields.

Industry Experience

Dr. Cantara's work under Prof. Wolfgang Ketterle (Director, MIT-Harvard Center for Ultracold Atoms; 2001 Nobel Laureate) has included:

- Building a new laboratory to study ultracold dipolar quantum gases with the most magnetic element, dysprosium.
- Creating dipolar-coupled atomic layers with subwavelength separations using polarized light.
- Implementing ultra-tight optical lattice confinement to suppress dipolar relaxation, a spin-relaxation process in magnetic atoms.
- Extensive design and construction experience ranging from custom built RF circuits, electro-optic devices, ultra-high vacuum and laser systems, polarization optics and imaging systems.
- Raman spectroscopy of Rydberg molecules formed via photo-association.
- Leveraging coursework in algorithms for inference and machine learning to create a classifier for the dynamical states of galaxy clusters.

Conferences

- Invited Talk, Apker Award, The D-term of Q-clouds, Washington DC
- Contributed Talk, Frontiers in Optics, Ultracold Trimer Ion Formation Energetics of Rb, San Jose, CA
- Contributed Talk, APS Meeting, The D-term of Exploding Q-balls, Savannah, GA

Honors/Distinctions

- NSF Graduate Research Fellowship
- MIT Physics Frank Fellowship
- APS Apker Award Finalist
- Goldwater Scholarship