Bryan Turo

bryanturo@gmail.com — Orlando, FL 32817

Education

University of Central Florida Aug 2021 – Present
Doctor of Philosophy in Optics and Photonics (Master of Science earned 2023)
Florida International University Feb 2018 - May 2021
Bachelor of Science in Physics, Minor in Mathematics

Professional Experience

Apple Inc. Jun 2024 – Aug 2024
Ph.D. Display Engineering Intern

- Developed a calibration methodology for next-generation iPhone displays, reducing per-part variability by 80% and scaling to high-volume assembly potentially affecting millions of units.
- Led a cross-team effort involving two software groups to build new tooling that enabled the hardware team to evaluate an unproven display technology.
- Built an analysis framework that accelerated internal investigations by 350%, enabling faster iteration on calibration strategies.

Light Fast Tech 2020 – 2021
Founder

- Founded and managed a board repair and IT services business specializing in MacBook micro-soldering and advanced diagnostics.

Research Experience

University of Central Florida Aug 2021 – Present
Quantum Spatio-Temporal Dynamics, Prof. Ayman Abouraddy

- Engineered entangled biphoton sources achieving omni-resonance in Fabry–Pérot cavities, preserving first- and second-order correlations (*Nature Communications*, submitted).
- Independently designed and implemented a quantum optics setup coupling spatial and temporal degrees of freedom; observed propagation invariance and self-healing effects (*Nature Photonics*, in review).
- Conducted ITAR-controlled research

Florida International University Feb 2019 – Jun 2021
Ultrafast Spectroscopy & Quantum Optics Lab, Prof. Hebin Li

- Designed FPGA-based coincidence counter for heralded single-photon source (SPDC).
- Integrated optics and Tensorflow to implement linear transforms of neural networks with a spatial light modulator.
- Presented QR-code free-space communication system using holography and polarization at McNair Conference.

Awards & Fellowships

- GEM Fellow (Apple), 2024
- Northrop Grumman Fellowship, 2021
- ORCGS Doctoral Fellowship, 2021
- NASA CRE2DO Fellow, 2020–2021
- Ronald E. McNair Fellow, 2020–2021
- S-STEM Scholar (NSF), 2019–2021
- First-Generation Scholarship, 2018–2021

Publications & Presentations

Journal Articles

- **Turo, B.L.**, Hall, L.A., Saleh, B., Abouraddy, A., "Broadband entangled-photon omni-resonance in a planar optical cavity," *arXiv:2510.01595*, submitted to *Nature Communications*
- **Turo, B.L.**, Saleh, B., Abouraddy, A. "Local and remote synthesis of single-photon space-time wave packets," *Nature Photonics*, in review.

Conference Presentations

- **Turo, B.L.**, Hall, L.A., Saleh, B., Abouraddy, A. "Single-Photon Omni-Resonance in a Planar Fabry–Pérot Cavity," *CLEO Conference*.
- **Turo, B.L.**, Saleh, B., Abouraddy, A. "Synthesizing Single-Photon Space-Time Wave Packets," *CLEO Conference*.
- **Turo, B.L.**, Saleh, B., Abouraddy, A. "Observation of Self-Healing in Single-Photon Space-Time Wave Packets," *CLEO Conference*.
- Hall, L.A., Romer, M.A., **Turo, B.L.**, et al. "Observation of Kilometer Propagation of Space-time Wavepackets," *CLEO Conference*.
- **Turo, B.L.** "QR code generation using light," *McNair Conference*.