# GURWINDER SINGH

11000 Diploma Drive, Apartment J,
Charlotte, NC 28262 Phone: (704)-497-7187 Email: 89sgurwinder@gmail.com
https://www.linkedin.com/in/gurwinder-singh1313/


## SUMMARY


Expert in optical engineering having strong grasp in Optics Studio and LightTrans Virtual Lab. Focused towards exploring new designs and ameliorating the existing technologies by utilizing the proficiency of python language. Excellent interpersonal and communication skills with strong leadership qualities. Strong analytical and presentation skills with proven ability to work in challenging environment.


## EDUCATION

Master of Science in Optical Science and Engineering — December 2018
University of North Carolina at Charlotte

Bachelors of Education — July 2012
Panjab University, Chandigarh, India

Master of Science in Astronomy and Space Physics — May 2011
Punjabi University, Patiala, India

## TECHNICAL SKILLS:

- Skilled in Optical model designing & prototyping, Spectroscopy, Fiber optics and Laser handling.
- Software: Zemax, LightTrans, Quindos, Matlab, Python, C, Fortran and Microsoft Office.

## CERTIFICATIONS

- Matlab Onramp, Matlab Deep Learning Onramp, Graduate Teaching/Research Assistantship, Teaching License.
- Certified Trainer of Laser safety awarded by Center for Optoelectronics and Optical communications at University of North Carolina at Charlotte.
- Awarded Tuition scholarships for Masters at University of North Carolina at Charlotte.

## PROFESSIONAL EXPERIENCE

*Teaching Assistant* — April 2017 - Present
Department of Physics and Optical Science
University of North Carolina at Charlotte

- Responsible for teaching the lab sessions of Introductory Physics course, creating homework and grading lab reports.
- Responsible for holding office hours and proctoring/grading exams.

*Assistant Professor(Physics)* — August 2012 – December 2016
Malwa College Bondli (Ludhiana)
Panjab University Chandigarh, India

## PROFESSIONAL PROJECT

Characterization of deep level defects in semiconductors using Deep Level Transient Spectroscopy.

## ACADEMIC PROJECTS

- Demonstrated a project based on Fiber-Optic Cable Signal Loss, Attenuation and Dispersion. Also, submitted a project engineered report on numerical aperture of a given optic fiber and calculated its acceptance angle.
- Presented a project based on Three-Dimensional Imaging using Fringe Projection Profilometry (Moiré's) Technique.
- Modelled a Microscope Objective with 10x, 0.25 Numerical aperture Using Optic Studio.
- Experienced in designs for reducing aberrations, Achromatic corrections and Periscopic lens using Optic Studio.
- Designed an Interferometer to test Optical flats for imperfection and optical inhomogeneities.
- Simulated Computed Generated Holograms using Gerchberg-Saxton algorithm, Vortex lenses of different charges and implemented it using Matlab and Virtual Lab fusion.
- Quantified the reflection in Two layer and Three-layer Guided Mode Resonance Reflection filter using Virtual Lab.
- Detected Longitudinal modes of He-Ne by making Homemade Scanning Fabry Perot Interferometer whose all parts are from old apparatus from lab. Free Spectral Range and Finesse was calculated.