Yaman Parasher

Erasmsu Mundus Joint Master Degree Student
Photonic Integarted Circuits, Sensors & Networks

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Final year (Last Semester) Erasmus+ Scholar in Photonic Integrated Circuits, Sensors & Networks. Currently working remotely on Master's thesis with Photonic Information Technology Group at Osaka University, Japan. **Experience encompasses working on various in-lab optical system design software tools & Optical Sensor experimental setups** along with **expertise in modeling, design, & simulation of advanced photonic integrated circuits**. Published 11 research articles in areas related to **Optical Communication, Photonics, Machine Learning, IoT & Green Technologies** in various peer-reviewed journals, books, & international conferences, with over **42 citations**. Including a journal paper (IF=3.867) & OSA International Conference paper, based on Optical Communication & Photonics.

Education

Erasmus Mundus Joint Master Degree - PIXNET
Specialization : Photonic Integrated Circuits, Sensors & Networks (PIXNET) *Sept. 2019 - Aug. 2021*
Scuola Superiore Sant'Anna, Pisa, Italy (Sept. 2019 - Aug. 2020)
Aston University, Birmingham, United Kingdom (Sept. 2020 - Mar. 2021)
Osaka University, Osaka, Japan (Apr. 2021 - Aug. 2021)

Integrated Dual Degree B.Tech + M.Tech in Electronics & Communication Engineering 8.12/10.0
Specialization : Wireless Communication & Networks *Aug. 2013 - May 2018*
School of ICT, Gautam Buddha University (State Government University)
Greater Noida, Uttar Pradesh, India (Secured First Divison with Distinction)

Scholastic Achievements

- Secured Merit Certificate from Central Board of Secondary Education (CBSE) & Kendriya Vidyalaya Sangathan (KVS) for being in the top **0.1%** among **1,000,000** candidates in the All India Secondary School Examination (Class X) 2010 across the whole of India.
- Awarded prestigious Erasmus Mundus Joint Master Degree in Photonic Integrated Circuits, Sensors and Networks (PIXNET). As a part of the degree program, I am supposed to spend my first year (1st & 2nd Semester) at TeCIP Institute, Scuola Superiore Sant'Anna, Pisa, Italy, second year (3rd Semester) at Aston Institute of Photonic Technologies, Aston University, UK and the last or the (4th Semester) at the Photonics Center Osaka University, Japan.

Technical Strengths

- **Programming Languages:** C/C++, Python, R, LaTeX
- **Photonic CAD Tools:** OptiSuite, OptSim, COMSOL, Lumerical (FDTD, MODE, INTERCONNECT)
- **Layout Design Tools:** KLayout+Nazca, Mentor Graphics L-Edit
- **Scientific Softwares:** MATLAB, ns2/3, QualNet
- **EDA Tools:** OrCAD, Multisim, LTSpice, EAGLE
- **Misc.:** Knowledge of Silicon Microfabrication/Nanofabrication Technologies

Relevant Certification

edX course UBCx: Phot1xSilicon Photonics Design, Fabrication and Data Analysis by Prof. Dr. Lukas Chrostowski. Here, I was able to design, model, and characterize photonic intergated circuits - pas-sive devices like like Directional, Grating Couplers, Y-Splitters,Spot Size Converters, Bragg Gratings,MZIs, Ring Resonators & circuits like MZI/ Ring Resonator based Wavelength Selective Switch, Po-larization Splitting Rotator based on Sub-Wavelength Grating (SWG) waveguides, & etc. in LumericalSuite, KLayout & Mentor Graphics L-Edit.

Relevant Internships and Research Projects

Experimental Research Volunteer : Photonics Research Group
Guide: Prof. Dr. David Webb, Professor Photonics, Aston Institute of Photonic Technologies, UK *Ongoing*

- Developing low-cost Digital Image Correlation setup for strain measurement in geotechnical applications.
- Also, involved in setting up of optical & characterization benches with acquisition lines to characterize, test, validate, & calibrate polymeric Fiber Bragg Grating (FBG) sensor for the same applications.

Project Associate : Optical Communication & Photonics Group
Guide: Prof. Dr. Gurjit Kaur, Professor, Delhi Technological University (DTU), India *Aug. 2018 - Aug. 2019*

- Design/Simulation/Modeling of high speed hybrid Optical Transmission Systems using OptiSystem.
- Documented technical projects proposals, book chapters, & research papers.
- Tool Used : OptiSuite & MATLAB.

International Summer Research Intern : Photonic Nanostructures & Devices Lab
Guide: Guo-En Chang, Professor, National Chung Cheng University (CCU), Taiwan *Summer 2018*

- Project : To increase Reflectivity of GeSn-based RCE (Resonant-cavity-enhanced) - PD (Photodetector) on SOI substrate with Si/SiO2 Distributed Bragg reflectors (DBRs).
- Brought improvement in the geometry & found the appropriate number of resonant DBR pairs that can help to deliver maximum reflectivity of around 99% (approximately) in the resonant cavity structure.
- Tool Used : COMSOL & MATLAB.

Research Intern : Inubation Centre for Medical Electronics - IIT Patna
Guide: Prof. Dr. Kailash Chandra Ray , Professor, Indian Institute of Technology(IIT), Patna, India *Summer 2017*

- Developed Micro Thermal Energy Harvesting Systems for Biomedical Implants like Pacemaker.
- Tool Used : HSPICE (180-nm CMOS technology)

Relevant Research Publications (Google Scholar Account Link)

- Kaur, Gurjit, Disha Srivastava, Prabhjot Singh, and **Yaman Parasher**. "Development of a novel hybrid PDM/OFDM technique for FSO system and its performance analysis." Optics & Laser Technology 109 (2019): 256-262. (Impact Factor (IF) : 3.867)
- **Parasher, Yaman**, Akshay Kaushik, Gurjit Kaur, and Prabhjot Singh. "Modelling of structural and material parameters of optical planar waveguide to control birefringence." In Latin America Optics and Photonics Conference, pp. Th4A-36. Optical Society of America, 2018.

Relevant Coursework Undertaken

Modelling & Characterization of Fibre Photonic Devices	Photonics Intregrated Circuits
Laboratory of Photonic Integrated Circuits	Photonic Technologies
Photonic Integration for Sensing	Photonic Integrated Technologies
Microwave Photonics	Optoelectronic Devices for Metrology
Fundamentals of Applied Optics	Electromagnetic Fields & Propagation
Fundamentals of Optical Communications	Communication Theory and Digital Transmission