

# ORAD RESHEF, PHD

Ottawa, ON  
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## Recent experience

### **Milkshake Technology Inc.,** Kingston ON (Remote)

Senior Optical Engineer

Mar. 2022 – Nov. 2024

Inverse design optimization of multifunctional integrated optical devices that respect design rule checks (DRC).

Simulated circuits with active and passive PDK components.

Scripted mask design for photonic integrated circuit (PIC) layouts.

Modeled nonlinear optical responses in integrated circuits.

### **Brilliant Nanophotonics Inc.,** Ottawa ON

Co-founder, consultant

Jun. 2021 – Feb. 2022

Designed custom integrated and free space photonic devices.

Managed clients, including securing contracts and invoicing.

### **University of Ottawa,** Ottawa ON

Research Associate, Advisor: Robert W. Boyd

Jul. 2016 – Feb. 2022

Modeled, fabricated and optically characterized silicon photonic components, nano-scale gold metasurfaces, and multi-layer stacks.

Trained over 25 students in experimental methods and in science communication (e.g., oral presentations, manuscript preparation).

Secured over \$4M in research funding from national funding agencies (including NSERC, NSF, and DARPA).

### **Harvard University,** Cambridge MA

Graduate Researcher, Advisor: Eric Mazur

Sept. 2010 – Jun. 2016

Designed, fabricated, and optically characterized metamaterials and photonic crystals in the silicon-on-insulator platform.

Developed fabrication procedure for titanium dioxide integrated photonics. Characterized optical waveguides and resonators.

## Education

### **Harvard University,** Cambridge MA

PhD and Master's, Applied Physics

Sept. 2010 – Jun. 2016

Dissertation: Integrated metamaterials and nanophotonics in CMOS-compatible materials

### **McGill University,** Montreal QC

Bachelor of Science, Honours Physics

Sept. 2006 – May 2009

First class honours, magna cum laude

## Selected skills

### **Optical Modeling and Simulations**

Lumerical FDTD, MODE, and

Interconnect, COMSOL Multiphysics,

Meep, MPB

### **Nanofabrication**

Computer-assisted design (CAD),

gdsfactory, Process engineering,

Lithography, Thin film deposition

and characterization, Pattern

transfer

### **Optical Characterization and**

### **Measurement Setup Construction**

Instrument control, microscopes and

telescopes, fiber optics, CW and

ultrafast lasers, spectrometers

### **Programming**

Python, MATLAB,  $\text{\LaTeX}$ , git

## Publications

40+ peer-reviewed publications, including:

- 3500 citations
- 3 journal covers
- 9 *Nature Research* publications
- 4 Editor's picks

40+ conference proceeding papers

4 patents

2 book chapters

## Selected honors and awards

OSA Ambassador

2021

Banting Postdoctoral Fellowship

2017 - 2019

Harvard Quantum Optics Fellowship

2015 - 2016

NSERC Postgrad Doctoral Fellowship

2011 - 2015

## Languages

English, French