

# victorherrera

laser and optical system designer

## contact



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## languages

english & spanish fluency

## programming

Python, C++, Ruby,  
Javascript  
ZPL,  $\text{\LaTeX}$   
 HTML5,  CSS3

## software

Octave/MATLAB  
Mathematica  
KiCAD, AutoCAD  
ZEMAX, OSLO  
LabVIEW, IGOR Pro  
Microsoft Office Suite  
Adobe Creative Suite

## core competencies

Optical Engineering  
Control Engineering

## loose competencies

Electrical Engineering  
Systems Engineering  
Software Engineering  
UI/UX Design

## education

June–2014

**Bachelor of Science**

California State Polytechnic University, Pomona

*Department of Physics and Astronomy*

- GPA: 3.6 (Physics) 3.9 (Senior Year) 3.36 (Cumulative)
- Relevant coursework:
  - Applied Optics (Raytracing, OSLO familiarity) and Optics Lab (Developed a method to determine the pixel size in a display device modeled as a diffraction grating)
  - Electronics (Circuit modeling with diodes, transistors, and op-amps)
  - Advanced Physics Lab (Precision capacitance measurements with Electrometer, Magnetic susceptibility measurements with Gouy balance, Tunneling spectroscopy measurements of a silicon Esaki junction, Viscous fluid measurements with Viscometer)
  - Solid State Physics Lab (Examined electron paramagnetic resonance signals of DPPH, the Hall Effect, and X ray Crystallography of the Sodium Chloride crystal lattice)

## experience

2013–2015

**SPECTOCCULAR LABS, LLC**

Pomona, California

*Optomechanics/Optical Design Contractor*

ZEMAX modeling and ZPL script writing that facilitated distortion analysis of simple and complex optical trains. I authored various ZPL macros intended to automate raytracing under various considerations. Developed non-linear regression models (Gauss-Newton, Levenberg-Marquardt) and utilized non-linear optimization techniques (Nelder-Mead simplex) in error processing for the feedback loop in a control system. Developed discrete and stochastic reflection models for varied optical fiber assemblies.

2013–2014

**SALIK RESEARCH GROUP**

Pomona, California

*Laboratory Technician*

Research concerned with developing optical sensors that can be used to detect very small temperature, strain, and refractive index changes. I have learned to taper standard optical communication fibers and test their sensitivity using an optical spectrum analyzer and broadband source.

2013–2013

**J&V Janitorial Services Inc.**

Inglewood, California

*Freelance Graphic Designer*

Designed visual identity and website.

## awards

2012–2014

**President's Honor List**

School of Science, California State Polytechnic University, Pomona

2013-2014 Academic Year, 2012-2013 Academic Year

2012–2014

**Dean's Honor List**

School of Science, California State Polytechnic University, Pomona

Spring Quarter 2014, Winter Quarter 2014, Fall Quarter 2013, Spring Quarter 2013, Winter Quarter 2013, Fall Quarter 2012, Fall Quarter 2011, Spring Quarter 2011, Spring Quarter 2010