

victorherrera

laser and optical system designer

contact

📍 Inglewood, CA

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languages

english & spanish fluency

programming

Python, C++, Ruby,

Javascript

ZPL, \LaTeX

HTML5, CSS3

software

Octave/MATLAB

Mathematica, Git

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)
 - 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

SPECTOCULAR LABS, LLC

Pomona, California

Optomechanics/Optical Design Contractor

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

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. Employed in-house tapering methods of standard optical communication fibers. Developed comprehensive tests to assure sensor sensitivity using an optical spectrum analyzer and broadband source.

2013–2013

J&V COMPLETE JANITORIAL SERVICES INC.

Inglewood, California

Freelance Graphic Designer

Designed visual identity and website architecture in HTML5 and CSS3.

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