victorherrera

laser and optical system designer

contact

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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 **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. 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