

Kristoffer Comiskey Olsen

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Applied Research and Engineering Qualifications

- Experience in optical design and optical analysis
- Computing skills: CodeV, FRED, Zemax, WinWrap BASIC (through FRED), MATLAB, C#, Mathematica, Python, C++, Image-J, Excel, PowerPoint, LaTeX

Research and Work Experience

GENESIS ENGINEERING SOLUTIONS

Optical Engineer

MARYLAND, USA

January 2020 - Current

- **Optical Analysis for NASA PACE/OCI**
 - Optical footprint analysis for aperture design
 - Etendue calculations for system(OCI) in multiple(pointing) configurations
 - Comparing spectral performance of system pointing through reverse raytraces and custom script to present data
 - Stray Light Analysis
 - Import and verification of optical design models into FRED
 - Construction of Stray Light analysis models from CAD Step files
 - Experience using FRED for modeling at the system and component level
 - Worked on the OCI Modeling team to model optical system performance/requirements using custom FRED scripts and C# application
 - This was for the development of an entire model of the OCI performance (Optical, Detector, Electronics, Etc.) including stray light performance
 - Fitting "as-built" data to a stray light performance model
 - Optical throughput analysis/tolerancing using custom FRED scripts and C# application
 - Visualization of stray light data in custom C# applications

STINGRAY MARINE SOLUTIONS

Summer Intern

OSLO, NORWAY

Summer 2018

- Modeling 3d space with a stereo vision system in water/air using MATLAB.
- Created basic scripts in C++ to be used in the main system architecture. My scripts were based on OpenCV documentation for calibrating 3d systems and for spatial mapping, but tailored for the system at hand and for both water and air calibration.
- Also created scripts for optimizing certain parameters of the system in addition to consulting the company's optics expert and leadership regarding future upgrades for optical components in the nodes.

UNIVERSITY OF ROCHESTER INSTITUTE OF OPTICS

Research Group Member (Chunlei Guo's group)

ROCHESTER, NY

November 2017-May 2019

- Member of a group doing research on high intensity femtosecond laser material processing.
- Worked on evaporative cooling systems using hydrophilic metal and polymer plates developed by ultra-fast laser ablation.
- Used machine shop tools to make experimental set-ups, independently conducting measurements, and used software to analyze data.

Education and Extra-curricular Experience

UNIVERSITY OF ROCHESTER

Bachelor of Science Degree in Optical Engineering

ROCHESTER, NY

May 2019

- Selected **Coursework**: Graduate Lens Design, Graduate Optical Communications, Geometrical and Physical Optics, Fourier Theory, Interference and Diffraction theory, Aberration Theory and Interferometry, Quantum Optics, Sources and Detectors (including laser physics), History of Technology
- *Extra-curricular Activities*
 - University of Rochester Rowing Team, August 2015-May 2019. Rowing for the Men's Varsity 8.
 - University of Rochester Sailing Club, August 2016-May 2019.