

# David Feng

SCIENTIST/ENGINEER

✉ feng\_david@hotmail.com | 🏠 davidfenglasers.com | [in](#) LinkedIn | [ORCID](#)

## Education

---

### Princeton University

Princeton, NJ

DOCTOR OF PHILOSOPHY, MECHANICAL & AEROSPACE ENGINEERING

January 2021

- Advisors: Professor Richard Miles & Dr. Mikhail Shneider
- Thesis: Advancements in Laser Rayleigh Scattering Diagnostics for Selected Gas Properties

### University of California, Irvine

Irvine, CA

BACHELOR OF SCIENCE, MECHANICAL ENGINEERING

June 2015

- Advisor: Professor Craig Murray
- Thesis: Spectroscopic Study of Criegee Intermediates

## Skills

---

<b>Programming</b>	FORTRAN, Python, html
<b>Software</b>	Anaconda, MATLAB, LabVIEW, Zemax, SolidWorks, Adobe Suite (AI, PS), Microsoft Office, LaTeX
<b>Laboratory</b>	Optics & lasers, experimental lab equipment, sensors & cameras, hand & power tools, computer troubleshooting
<b>Other</b>	Cross-communication & teamwork, report & proposal writing, multi-tasking, critical analysis

## Work Experience

---

### Lawrence Livermore National Laboratory

Livermore, CA

POSTDOCTORATE RESEARCHER

February 2022 - Present

- Use nonlinear optical techniques & fibers for laser pulse cleaning & characterization.
- Build high-power fiber laser systems based on stimulated Raman scattering for generation of new wavelengths.
- Submit quarterly reports and co-write proposals with supervisor & collaborators.

### MetroLaser, Inc.

Laguna Hills, CA

RESEARCH SCIENTIST

December 2020 - February 2022

- Directly manage two SBIR Phase II proposals for the development of density and high-speed velocimetry laser diagnostics.
- Build experiments in-lab to validate products & deliverables for clients.
- Build commercial software for products & deliverables.

### Princeton University

Princeton, NJ

PHD CANDIDATE, APPLIED PHYSICS GROUP

September 2015 - November 2020

- Experimental laser diagnostics to measure, model, & image high-speed gaseous flows, shock waves, plasmas, & flames.
- Co-wrote grant reports & proposals with advisor & collaborators.
- Taught undergraduate courses such as thermodynamics, fluid dynamics, and engineering lab.

### University of Tokyo

Tokyo, Japan

VISITING RESEARCHER, KOBAYASHI LAB

Sept. 2019 - Mar. 2020

- Used absorption spectroscopy for low-ppm detection of combustion-related molecules.
- Built a femtosecond fiber laser in the 3-5  $\mu\text{m}$  range and in the 7-12  $\mu\text{m}$  range for high-resolution spectroscopy of complex molecules.
- Assisted in building deep learning neural network for spectroscopic applications.

## Awards

---

<b>2023</b>	DoE Phase IV: A Novel Coherent Combining Approach Towards High Peak and High Average Power Ultrafast Lasers
<b>2019</b>	SBIR Phase II: Three-Dimensional Density Imaging by Rayleigh Scattering (With Metrolaser, Inc.)
<b>2019</b>	Japan Student Services Organization (JASSO) Scholarship, University of Tokyo
<b>2018</b>	SBIR Phase I: Laser Diagnostic for Multiple Properties in Unseeded High-Speed Flows (With Metrolaser, Inc.)
<b>2017</b>	National Defense Science Engineering Graduate Fellowship, Department of Defense
<b>2017</b>	Science, Mathematics, & Research For Transformation Fellowship, Department of Defense