David Feng

Laser Scientist/Engineer

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Education

Princeton University *Princeton, NJ*

Doctor of Philosophy, Mechanical & Aerospace Engineering

- 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

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

Skills

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

Work Experience

Lawrence Livermore National Laboratory *Livermore, CA*

Postdoctorate researcher

- 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

- 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

- 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

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

Awards

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