

## Join the Team

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We are seeking hardworking, organized, and positive candidates to join our team. Our work environment allows candidates to apply their academic knowledge in daily pursuit of technical discovery and change.

Our employees sharpen their skills, take on responsibilities, and help further the fields of materials science and space science while developing as professionals.



*"AO has allowed me to apply my mathematical and statistical knowledge to real world, physics-based problems. These applications have helped me learn more about mathematical and statistical algorithms and how to implement them through code. Everyone is always happy to answer questions and discuss topics further."*

*-Victoria  
Applied Mathematician*

## Contact Us

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We welcome inquiries relating to AO, our products, and career opportunities.

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Fairborn, OH 45324

Phone: (937) 431-5100

Email: [HR@appliedo.com](mailto:HR@appliedo.com)

Website: [www.appliedo.com](http://www.appliedo.com)



*Our mission is to work collaboratively and make a difference in a dynamic, rigorous environment where technical discovery is a daily pursuit.*



**The Right Balance of  
Non-conformity & Critical Thinking**

## Applied Optimization

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Since 1995, Applied Optimization, Inc. (AO) has been collaboratively discovering innovative solutions in material science and space science to address the technical challenges of our clients and partners in industry and government.

We focus in mathematical modeling for materials science and space science, specifically for Additive Manufacturing (AM), Space Domain Awareness (SDA), and optical engineering. We customize our technical solutions to customer needs to ensure specific answers for specific problems. Our innovative solutions are designed to provide results when utilized in a client's day-to-day processes.

## Our Focus

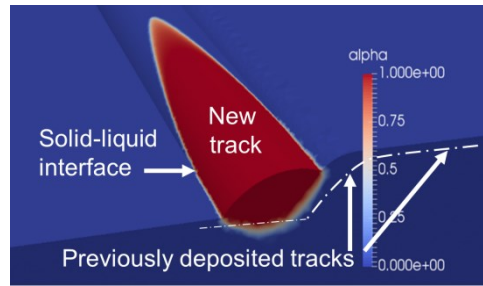
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We perform interdisciplinary research in:

- Additive manufacturing
- Algorithm development
- Applied and computational mathematics and modeling
- Astronomy
- Fluid dynamics
- Hypersonics
- Machine learning
- Mathematics and physics
- Material science
- Optical science and photonics
- Problem solving in pure sciences and engineering
- Scientific computations

## Materials Science

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AO's materials science team specializes in:

- Research and development in metallurgy and metals processing
- Melt-pool thermal-computation fluid dynamics for AM
- Build distortion prediction and thermal cycling
- Prediction of solidification parameters and grain structure

## Space Science

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AO's space team specializes in:

- Algorithm development for SSA data collection and exploitation
- Electro-optical sensor calibration and space object characterization
- Optical design and implementation of spectral imaging

## AO Products

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### Additive Manufacturing Parameter Predictor (AMP<sup>2</sup>)

Multi-scale, multi-physics software for AM:

- Uses Integrated Computational Materials Engineering (ICME)
- Performs Macro-Meso-Micro scale analysis
- Optimizes AM parameters
- Simulates the powder bed and blown powder processes

### Software Products for Space Situational Awareness

- **Evaluation Rating for Sensor Observations (ERSOtool)**
  - Implements statistical assessment methods for measuring data consistency
- **Multi-Spectral Space Object Characterization (ColorTool)**
  - Computes the color indices of RSOs
  - Characterizes RSOs by their color indices
- **Photometry-based Satellite Status Assessment System (PSSAS)**
  - Detects status changes in near real time using spatially non-resolved photometry data of satellites
- **Resident Space Object (RSO) albedo-Area Decomposition Tool (RADtool)**
  - Estimates sizes of body and solar panel arrays