Using Machine Learning to Create High-Efficiency Optical Design Tools

**Title:** Using Machine Learning to Create High-Efficiency Optical Design Tools

**Invention:** Researchers at the University of Arizona have developed systems and techniques that enable a determination of an estimated mapping from the design parameter space to the performance parameter space in real time.

**Background:** Optical lens design is the process of designing a lens to meet a set of performance requirements and constraints. The design process is computationally intensive. One problem in optical system design is that, although finding a mapping from the design parameter space to the performance parameter space is easy (taking only a single ray trace), given a desired set of performance characteristics, it is extremely complicated to determine the corresponding design parameters.

**Advantages:**

* saves time
* increases functionality of design software

**Applications:**

* optical design software

**Contact:** Amy Phillips

amyp@tla.arizona.edu

Refer to case number UA19-048

The University of Arizona, Tucson, Arizona