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

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Refer to case number UA19-048
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