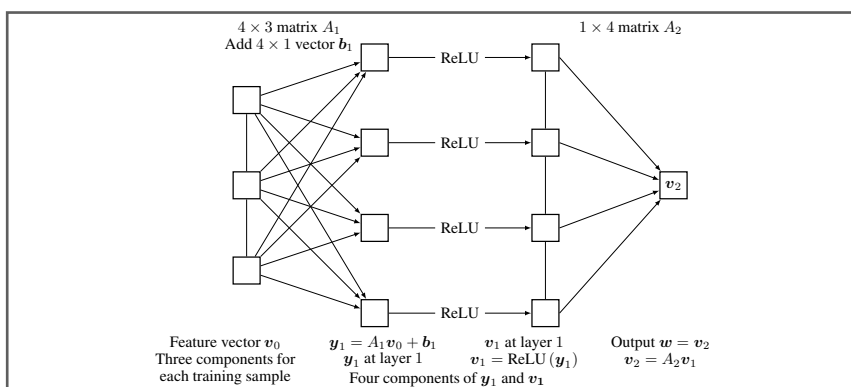


Online Seminar on Undergraduate Mathematics Education

Linear Algebra and Deep Learning

Gil Strang, MIT



"Deep learning" is shorthand for the creation of a function $F(x, v)$ so that the inputs v (the training data) produce correct outputs. So it is a new type of interpolation. The

mathematics is a combination of linear algebra and calculus (optimizing the weights) and statistics (controlling the variance). The 18.065 course at MIT has become a "second course in linear algebra" for students from all departments and all years. It has a textbook, [Linear Algebra and Learning from Data](#). Video lectures are on [OpenCourseWare](#). The key link from linear algebra to data science is the Singular Value Decomposition. It has become the foundation of applied linear algebra and we need to teach it.

Noon ET, September 28, 2021

Zoom link: <https://cornell.zoom.us/j/92415199317>, passcode olsume

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