MathematicalToolkit Library

Linear Algebra

ndarray

Sum

Diff

Mul

with axis control

Forward Mode Auto Differentiation

Dual Type
value, derivative

Function Overloading
add, sub, mul, power

Basic Function Derivatives
sin, cos, tanh, polynomials

Chain Rule
chain rule is applied to differentiate complex functions

Output
partial derivatives, gradient, jacobian matrix

User

```
#include "mathematicaltoolkit.h"
```

Optimization Problems

Differential Rendering

Any problems involving differentiation