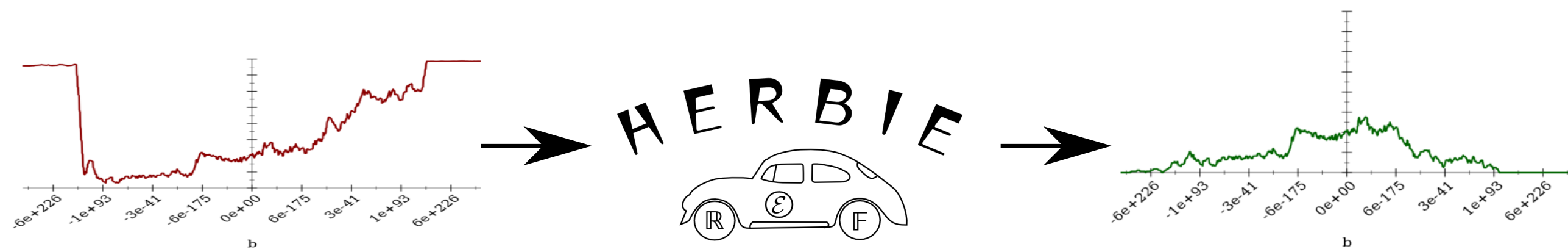


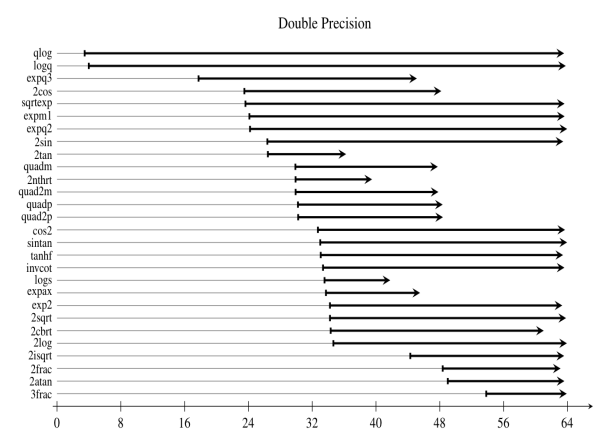
Interactive Visualization

Created by Alex Sanchez-Stern, built on work by Pavel Panchekha, Alex Sanchez-Stern, James Wilcox, and Zachary Tatlock

What is Herbie?



Automatically improving floating point error



Solves classic numerical problems

But behavior is difficult to understand

Data Transformation

Identify relevant axis

Graphing Error

Tying operations to ranges

Pruning candidates

Future Work

Smooth out interaction

New algorithms for range finding

Interface

Enter your formula

Parsed from c-like syntax

Choose locations to address

Error is localized to a few operations

Improvements target certain operations

Pick candidates to keep

Not all candidates are useful

Graphs help users decide

Choose next to analyze

Combined error graph

Get final formula

Branch conditions

Useful candidates

