FOR COMPUTER SCIENCE AND MATH MAJORS

SHOW ME THE MONEY

JOBS - WHERE ARE THEY?

• Banking - quants
• Advertising - big data
• Healthcare - bioinformatics
• Transportation - optimization
• Energy - simulations and modeling

WHAT WILL THEY DO IN THOSE JOBS?

GRUNT TASK FOR YEARS CLEAN-UP AND TEST

STARTING THE NEXT 50 YEARS

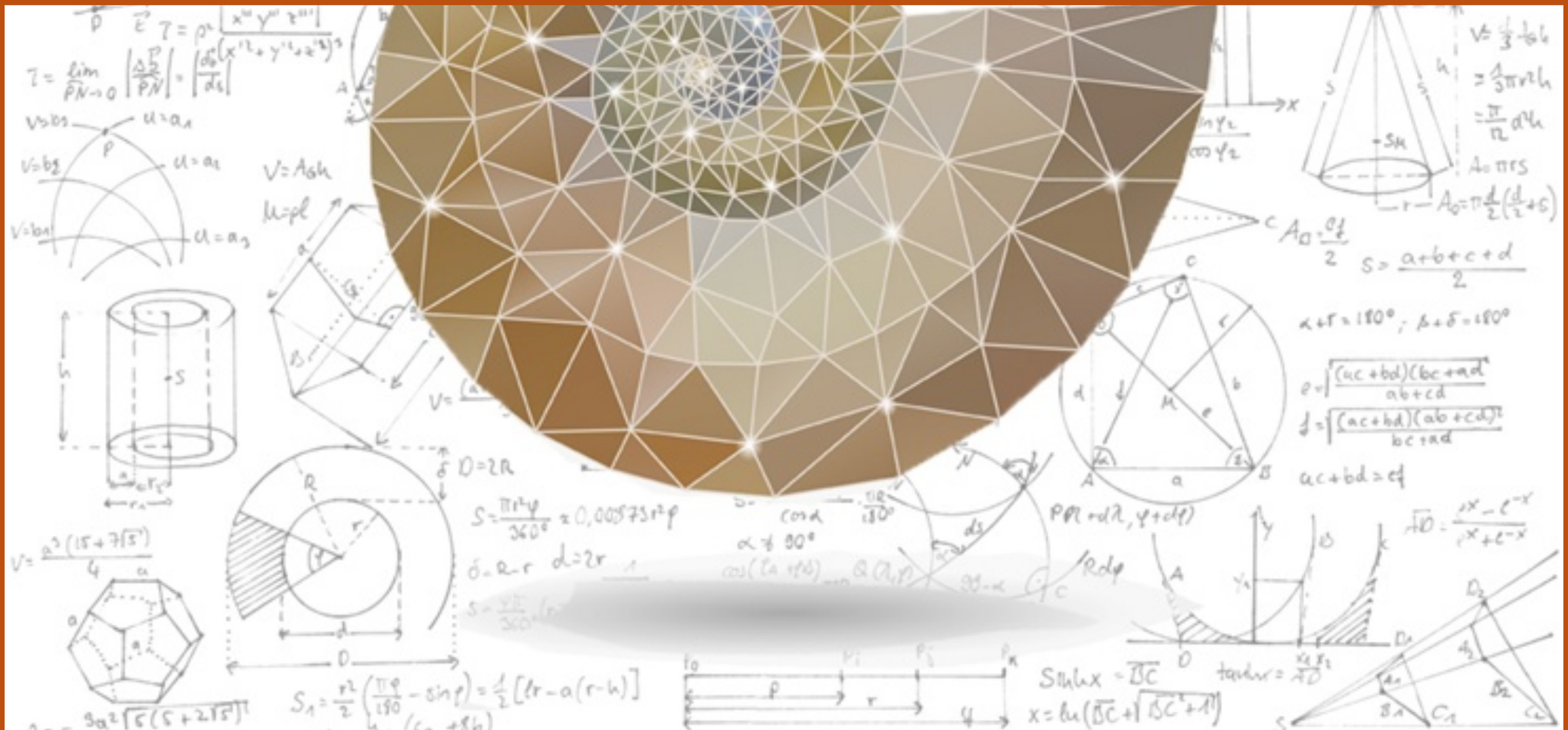
- The job no one else wants
- Clean up the mess
- Testing and QA
- Routine stuff
- Culture tolerance
- Temper the ego

SKILLS AND KNOWLEDGE

HOW TO GET THE JOB?

Master one thing better than your peers
then share it with everyone.
Find people who know it better than you,
then repeat.

EINSTEIN IS A BRAND FIRST AND A BRAIN SECOND



HOW TO PREPARE THE STUDENTS?

WHAT CAN THE FACULTY DO?

HOW DOES IT FUNCTION AND CREATE VALUE?

UNDERSTAND BUSINESS

INTEGRATING THEORY WITH PRACTICE

CURRICULUM FOR INDUSTRY READINESS

REAL WORLD PROJECT
OVER 4 YEARS AS A TEAM

Problem framing

Fit for use

Tools Skills

Practice to mastery

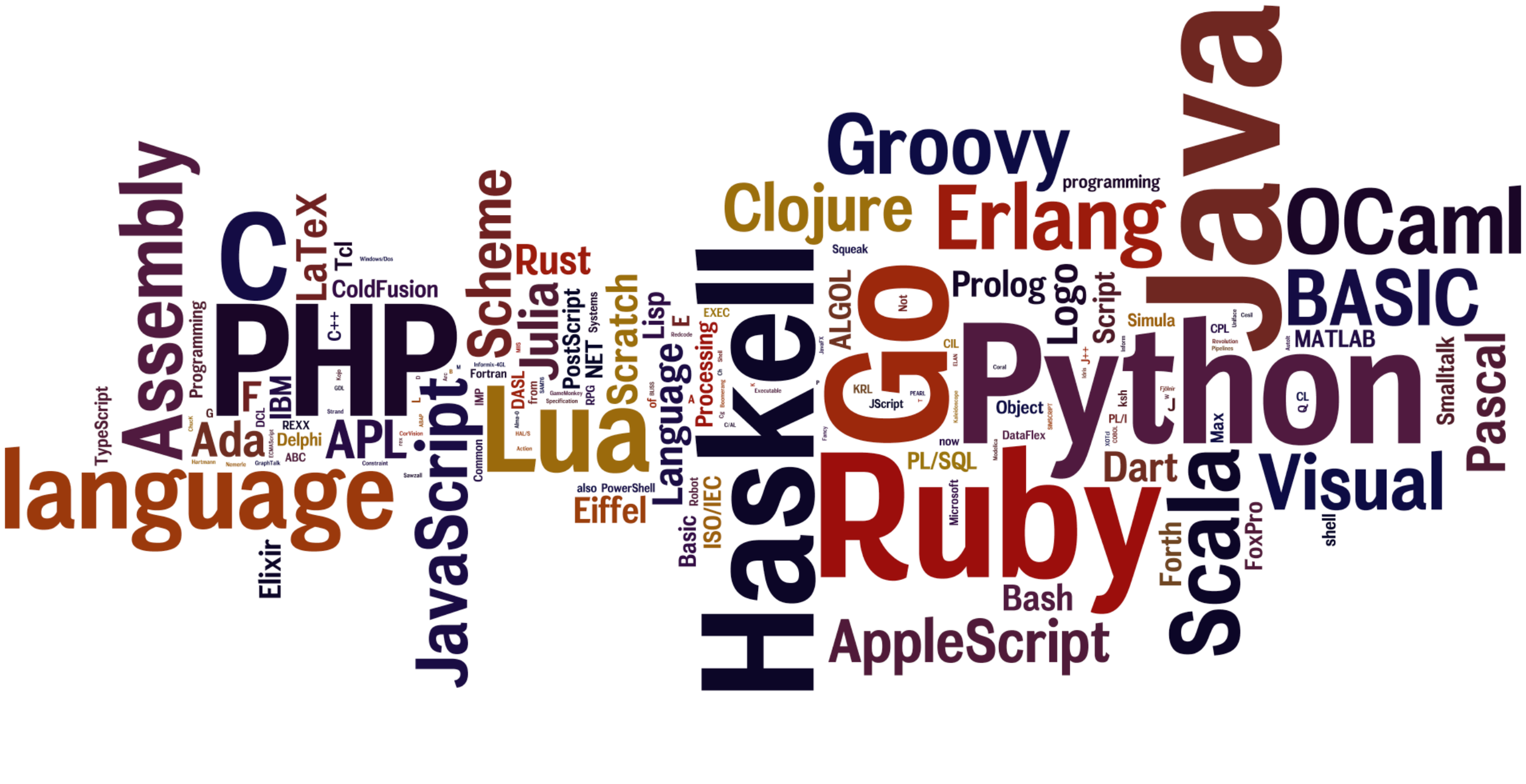
Theory

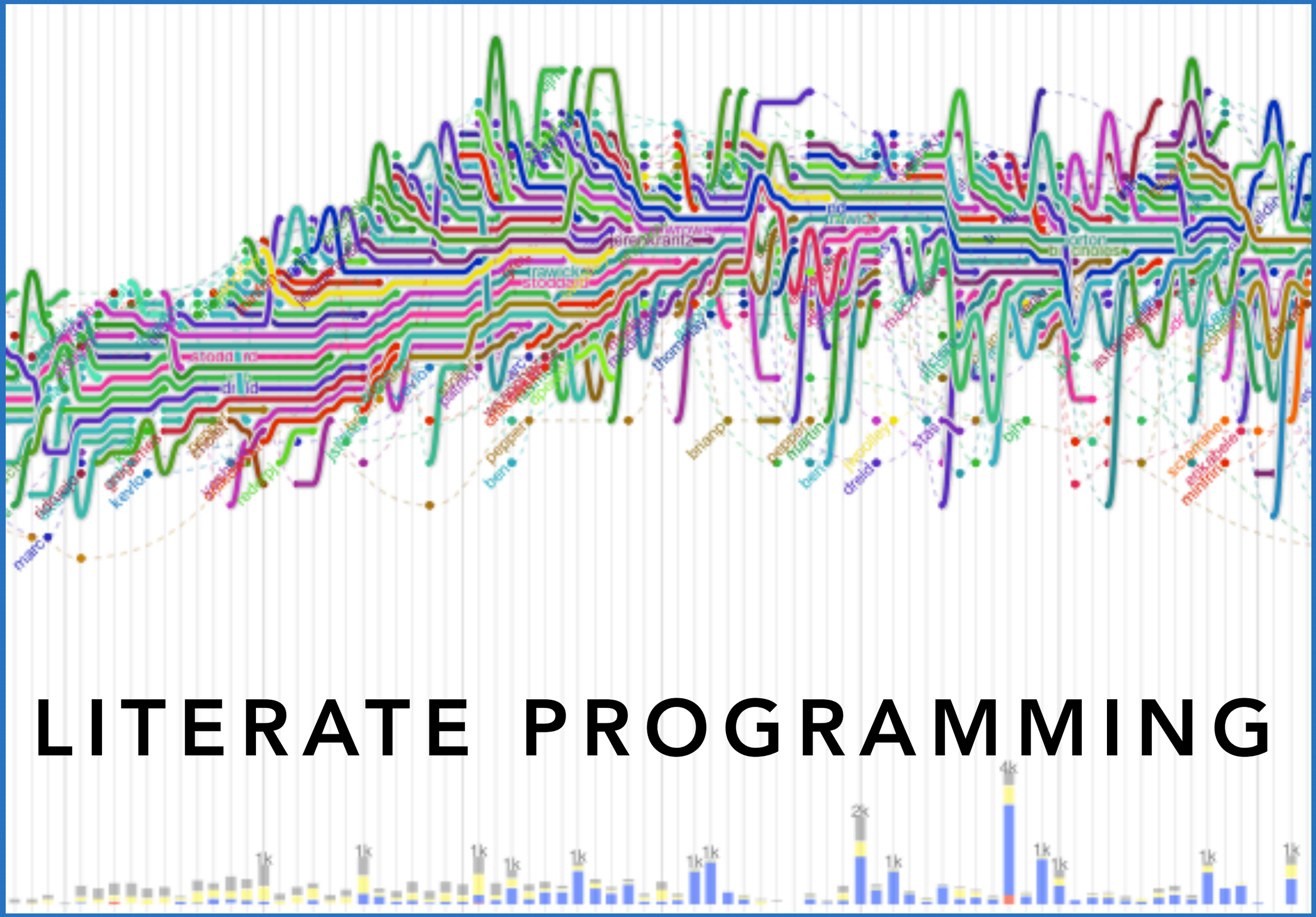
Build/extend tools

Share solutions

LEARN TO THINK MULTI-PARADIGM

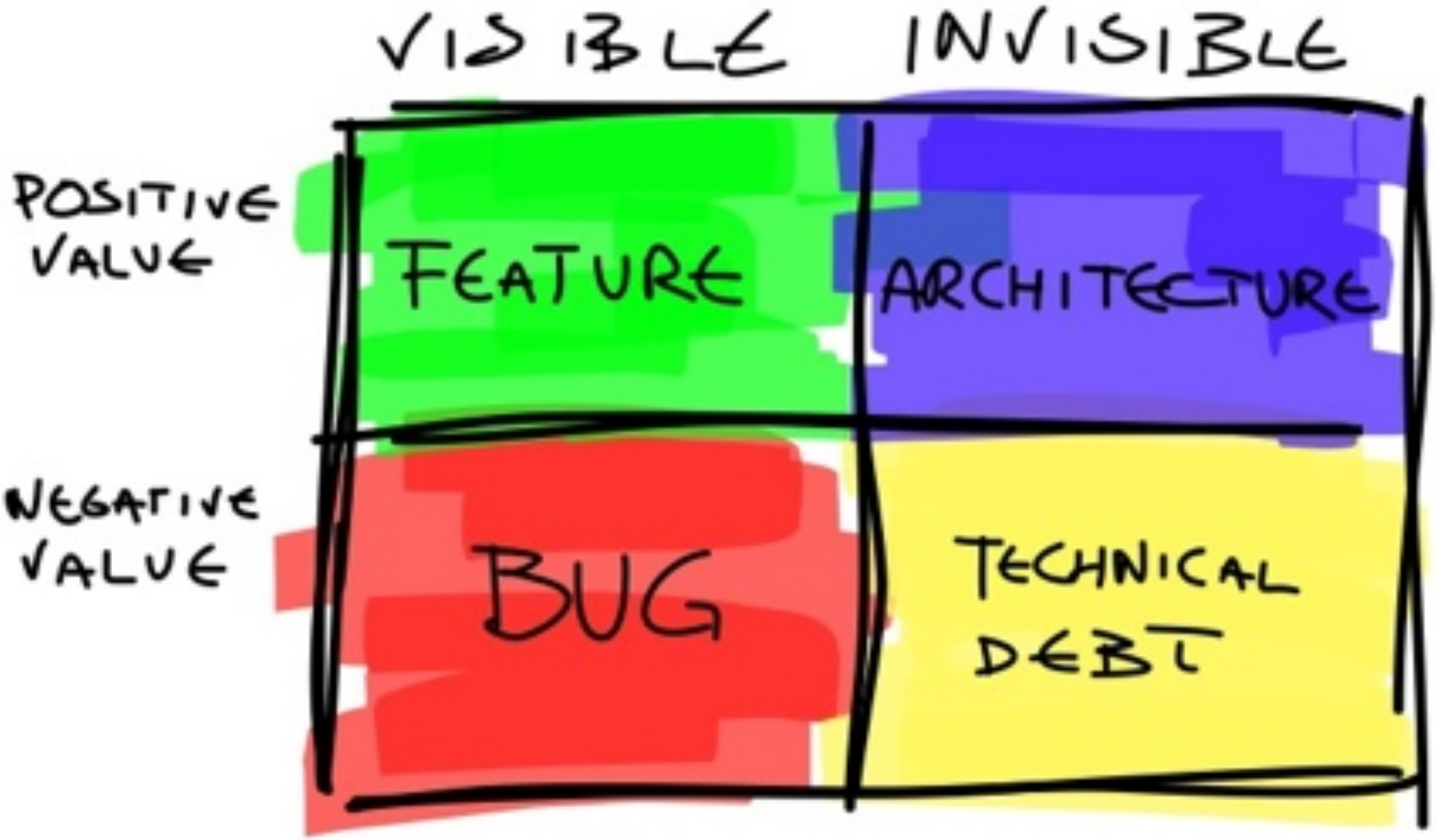
POLYGOT PROGRAMMING





LITERATE PROGRAMMING

VISUALIZING AND USING SOFTWARE METRICS

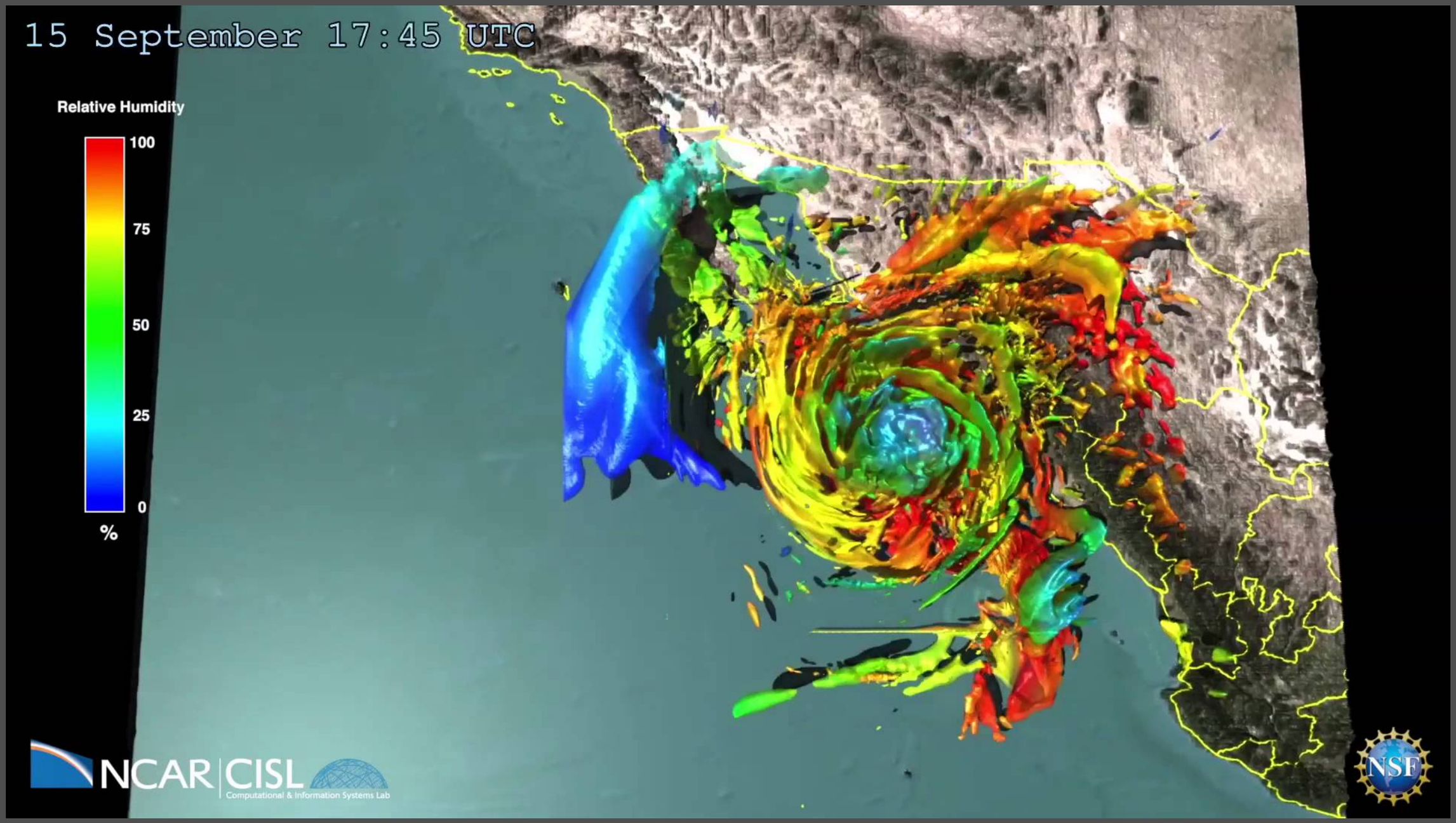


Economics of Technical Debt of Legacy Software

LIVE CODING PERFORMANCE

TESLA NVIDIA CUDA

SUPERCOMPUTING SIMULATION



IoT Tools
Frameworks

Cyber Security

Infrastructure
Platforms

Two essential skills that are scarce

1. DEBUGGING

2. OPTIMIZATION

PROCESS-LEAN/AGILE

SOCIAL CONSTRUCTION WITH PEER PROGRAMMING

GLOBAL COMPETITION

- Millions of Web/App developers
- Programming is a commodity
- Programming was co'opted by corp interest
- Top talent remains scarce
- Technology as fashion
- New value created by entrepreneurs, not technocrats

HAS A DEGREE BUT NO JOB

In the future everyone becomes an entrepreneur

LET'S CREATE JOBS