

**Fred Schenkelberg**

# How to Learn ALT







A Good ALT





A Bad ALT



# A Great ALT

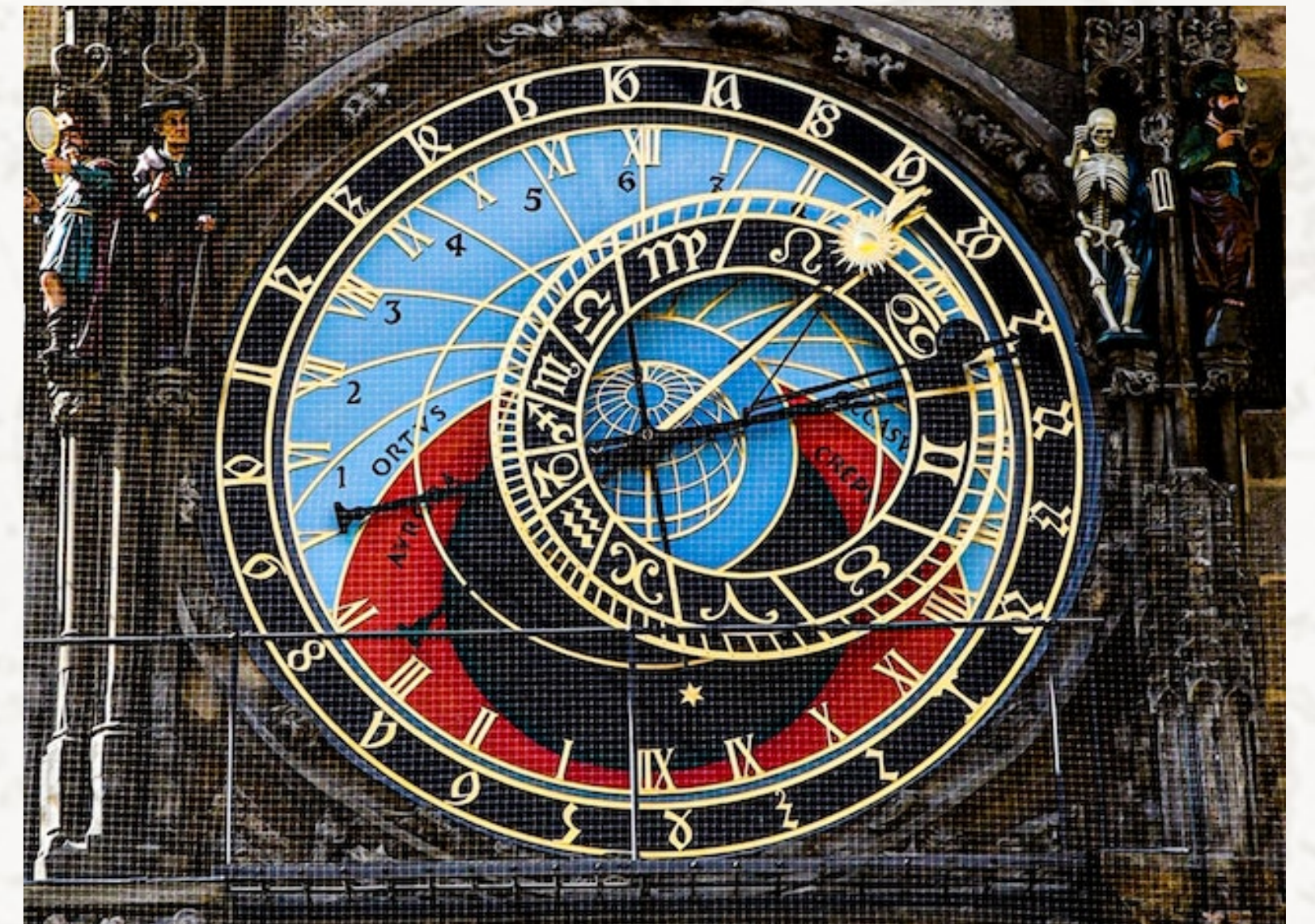
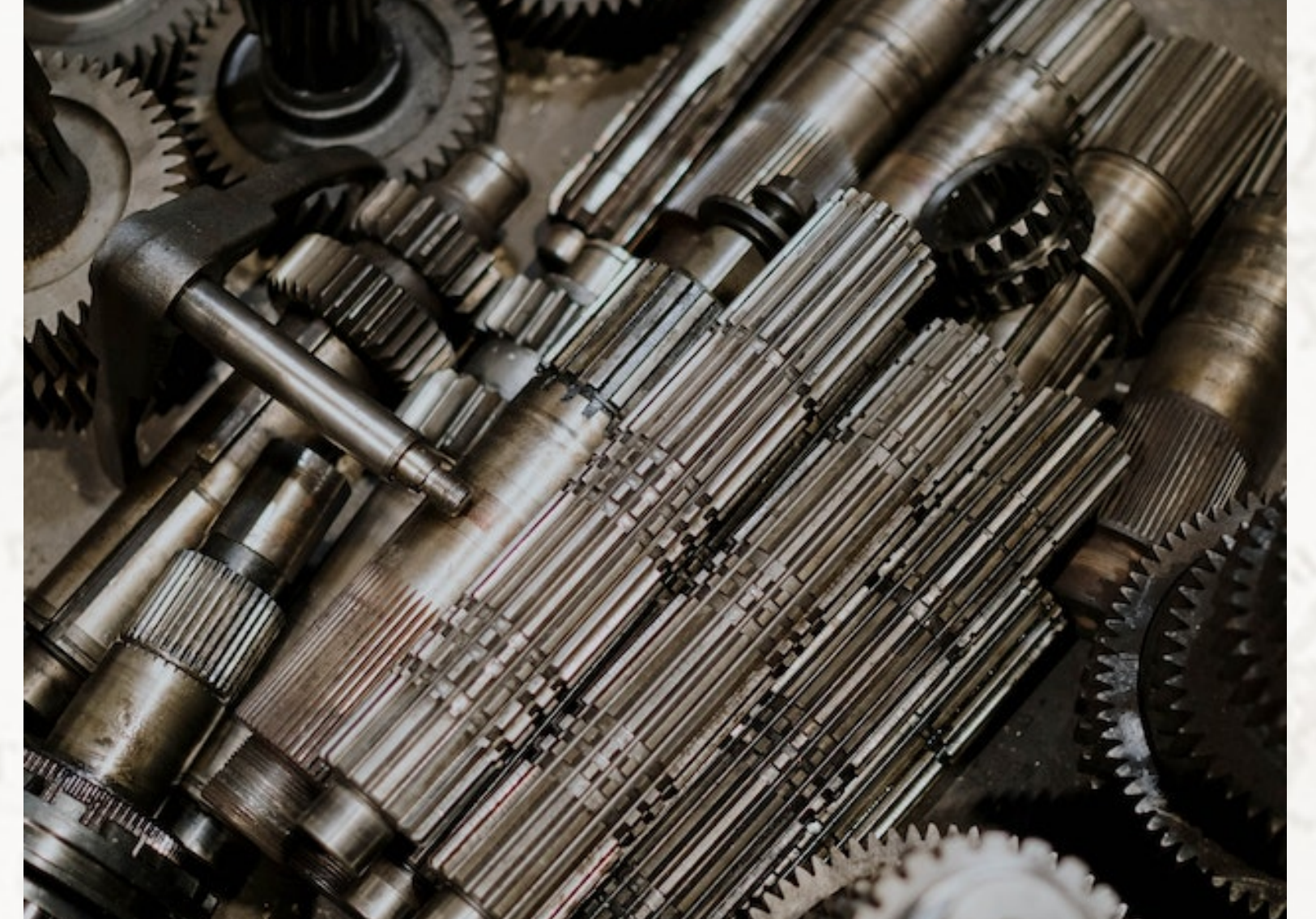




There are steps you can take  
to master significant *ALTs*



# Learning ALTs





# First Assignment

## Learning ALTs

Our new product is buried in concrete bridges – does it last 20 years?





# **Books, Conferences, ...**

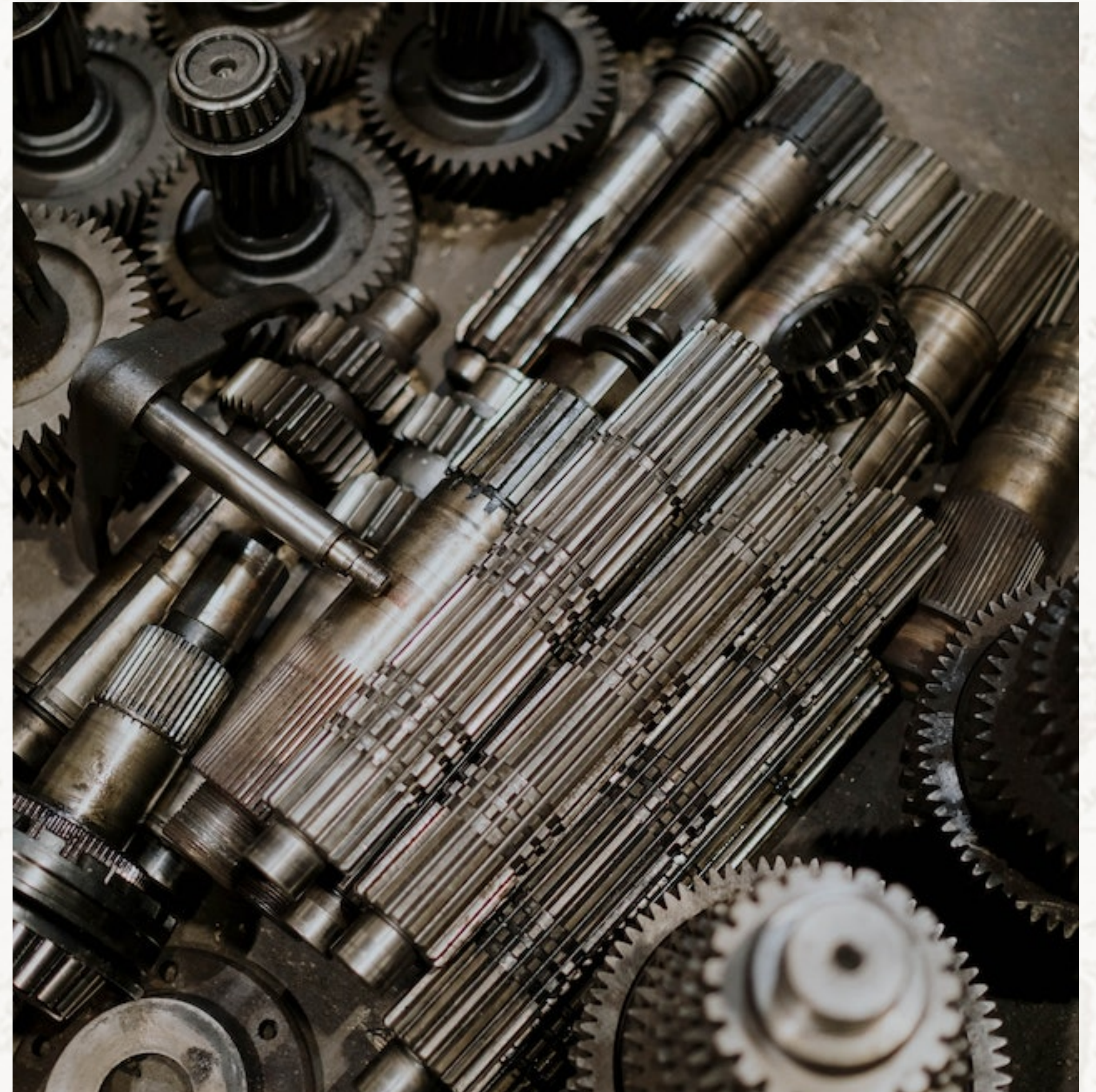
**Learning ALTs**

**Library rat**

**Wayne Nelson's book**

**Conference in Boston**

**Co-writing a technical paper**





# Still Learning

## Learning ALTs

Dozens of books

Hundreds of technical papers

Many, many discussions

Teaching, mentoring, consulting

and, more learning to go, I'm sure





**Focus on**

**Failure Mechanisms**



# 4 Steps to Learn ALT





# Try

## 4 Steps to Learn ALT

To learn, you first need  
to want to learn





# Practice / Study

## 4 Steps to Learn ALT

Do the homework

work out examples

check your work





# Talk / Discuss

## 4 Steps to Learn ALT

Everybody loves to talk about failure mechanisms

Nobody loves to talk about statistics





# Reflect

## 4 Steps to Learn ALT

Spend time to think about what you have learned and still need to learn



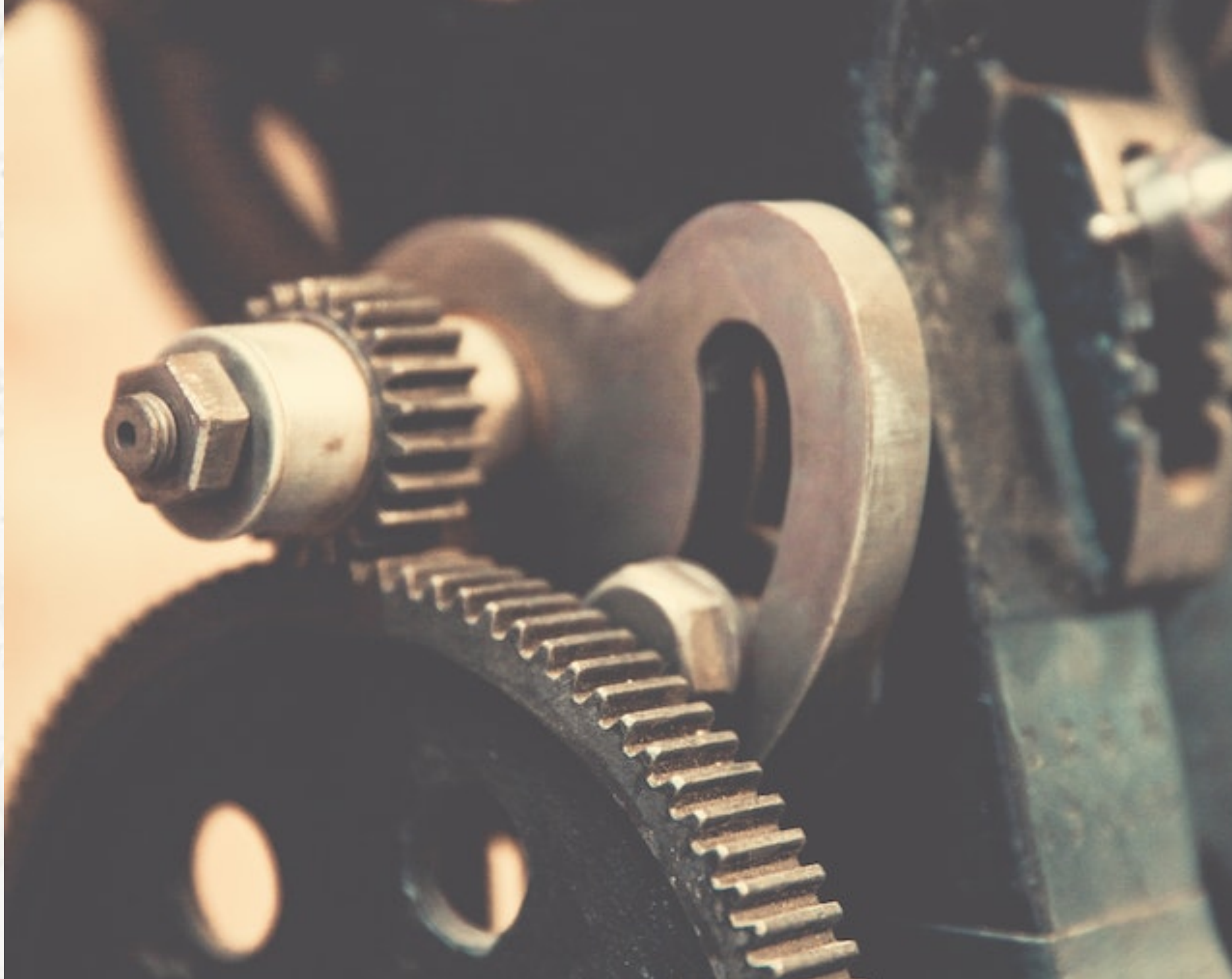


Get

Feedback



# ALT Resources





# Books / Papers

## ALT Resources

Accelerated Testing  
– Wayne Nelson

Statistical Methods for Reliability  
Data – William Q. Meeker, Luis A.  
Escobar, & Francis O. Pascual

Technical papers on technology,  
material, application, or failure  
mechanism.

Papers on ALT methods





# Websites / Conferences

## 4 Steps to Learn ALT

[accendoreliability.com](http://accendoreliability.com) (of course)

[weibull.com](http://weibull.com)

Engineering Statistics Handbook by  
NIST

RAMS conference

Specialized or focused conferences,  
workshops, and seminars





# Courses / Coaches

## 4 Steps to Learn ALT

Universities

Consultants

Key is a course that encourages you to interact, question, discuss, and stay in touch.

Coaches/Mentors – key is the learning process





**It's a Journey**

**Let's accelerate it**



# Additional Comments and Questions



# Thanks

**see more at [AccendoReliability.com](https://AccendoReliability.com)**