**Application of regression and artificial neural network analysis in modelling of tool–chip interface temperature in machining**

* Predicts the temperature (single value) at the tool-chip interface of a lathe cutter.
* Uses Regression Analysis, Artificial Neural Networks, and the LM Algorithm.
  + LM Algorithm is supposed to be an interpolation between Gradient Descent and the Gauss-Newton method. It uses the same MSE loss function.
  + It appears to behave the same as Gradient Descent, but has some sort of acceleration.
* Simple 2 layer perceptron with sigmoid activation.

**Efficient optimization of process parameters in 2.5 D end milling using neural network and genetic algorithm**

* Finds best combination of cutter parameters that leads to the smallest rise in cutting temperature.
* An Artificial Neural Network models the fitness function of a Genetic Algorithm.
  + Genetic Algorithm uses NN to inform its choices.
* Empirical data shows that the method lowered temperature rise from 19.7 to 17.2 degrees Celsius.
* Only 32 experiments carried out.
* 4 inputs, 3 layers, 10 hidden units, with a single output node.

**Geometric algorithms for computing cutter engagement functions in 2.5D milling operations**

* Computes the cutter engagement as a percentage of how much each discrete region on the cutter (modeled as a circle) is in contact with workpiece material.
* While the cutter is discretized into regions, the math on each region is continuous.

**Milling Force Modeling: A Comparison of Two Approaches**

* Evaluates the dependence of cutting force coefficients on milling process parameters. The parameters used are:
  + Feed per tooth
  + Spindle speed
  + Radial immersion
* The force coefficients are used to multiply
* The paper explores two approaches to determining the force coefficients:
  + Linear regression and averaging of the force
  + Nonlinear optimization and a look at the instantaneous force
* Experiments determined that feed per tooth, spindle speed, and radial immersion were best described by a Nonlinear system.

**A discrete simulation-based algorithm for the technological investigation of 2.5D milling operations**

* Gives numerical methods for calculating properties of the milling tool
  + Not the force.
  + How much material is removed within a single spin
  + Center of the cutter tool
  + Radial immersion
* Explains how to perform simple simulation of a cutting path.

**New Approaches for the Determination of Specific Values for Process Models in Machining Using Artificial Neural Networks**

* Tries to have an ANN learn the force on the milling tool.
* Gives some equations for modeling force.
  + These appear to be simplified and workable.
* Simple multilayer perceptron.

**Prediction of Cutting Forces with Neural Network by Milling Functionally Graded Material**

* Absolute dogshit paper.
* Predicts measured cutting force (does not describe how its measured) based on depth of cut and feed rate alone.

**Physics guided neural network for machining tool wear prediction**