Research

Engineering Design & Manufacture Group

University of Bath, UK

RepRap

RepRap – the replicating rapid prototyper

R. Jones, P. Haufe, E. Sells, P. Iravani, V. Olliver, C. Palmer & A. Bowyer
Robotica

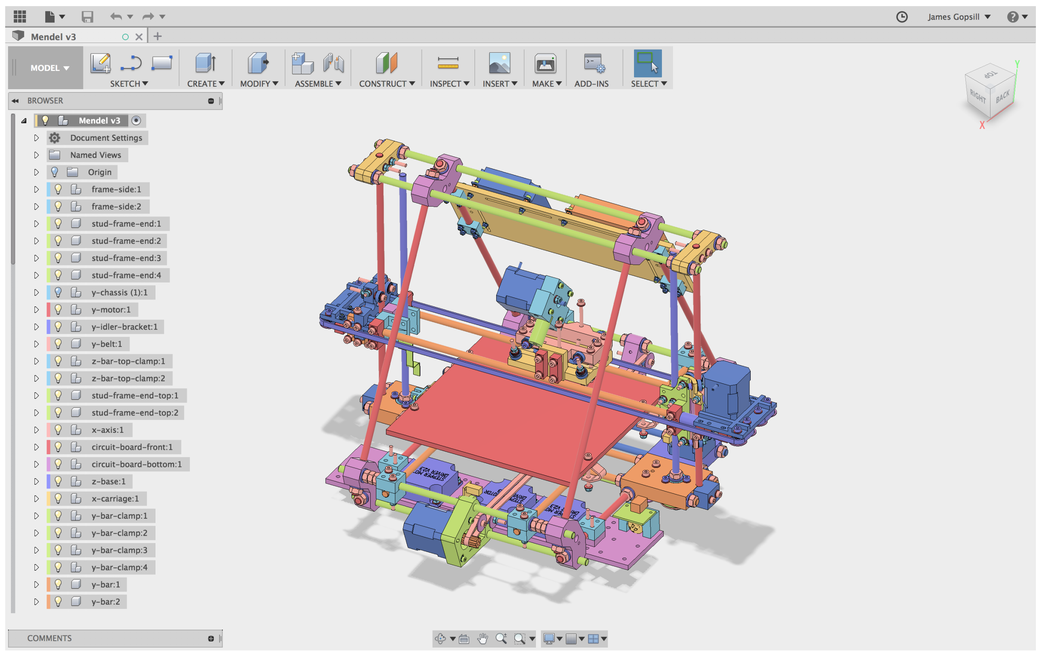


Fig. 1: RepRap 3D Printer

Infill Optimisation

Using Finite Element Analysis to Influence the Infill Design of Fused Deposition Modelled Parts

J.A. Gopsill, J. Shindler & B.J. Hicks
Progress in Additive Manufacturing

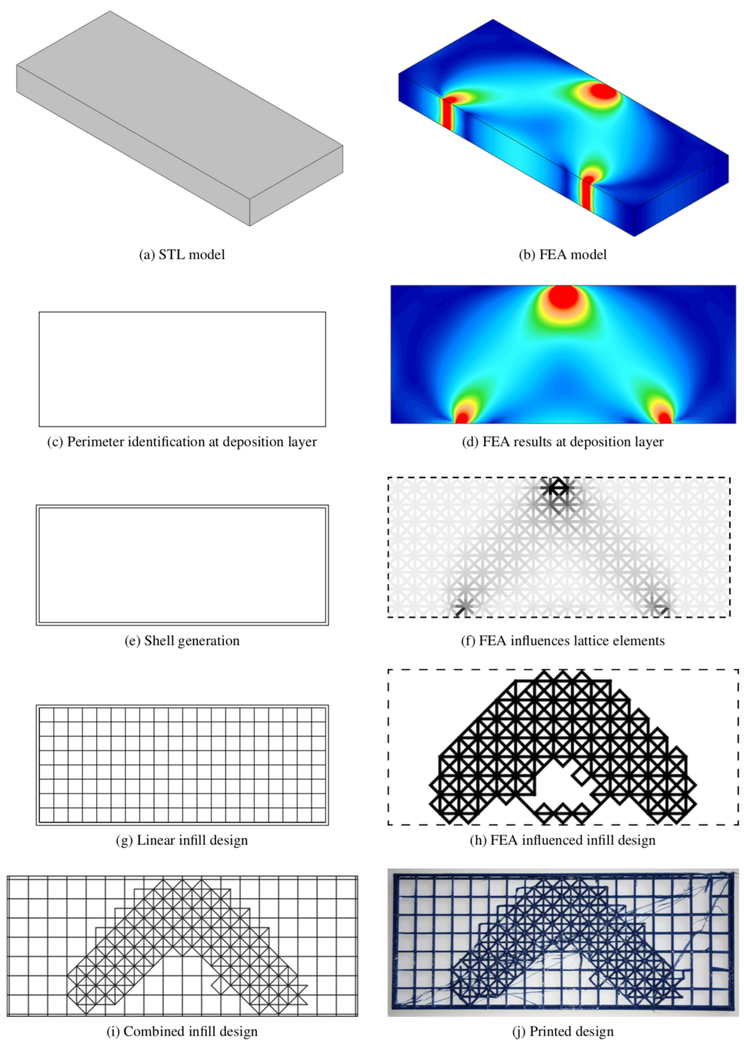


Fig. 2: Infill generation process

Project Management Support

A Sequence-based Approach to Analysing and Representing Engineering Project Normality

L. Shi, J.A. Gopsill, L. Newnes, S.J. Culley
IEEE International Conference on Tools with Artificial Intelligence

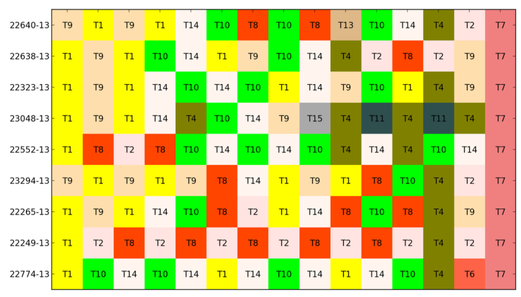


Fig. 3: Workload modelling of aircraft maintenance events

Meaning from Metadata

Automatic generation of design structure matrices through the evolution of product models

J.A. Gopsill, C. Snider, C. McMahon & B.J. Hicks
Artificial Intelligence for Engineering Design, Analysis and Manufacturing

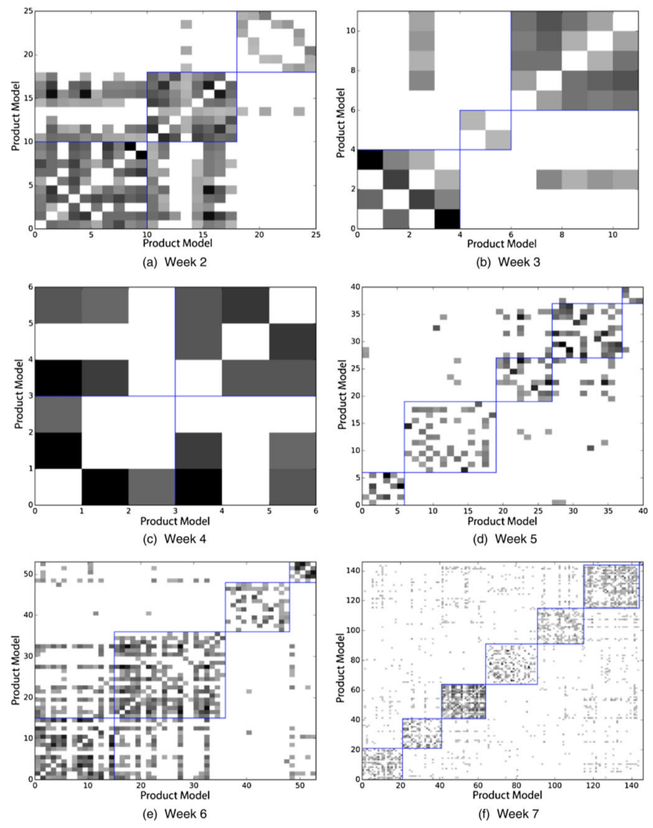
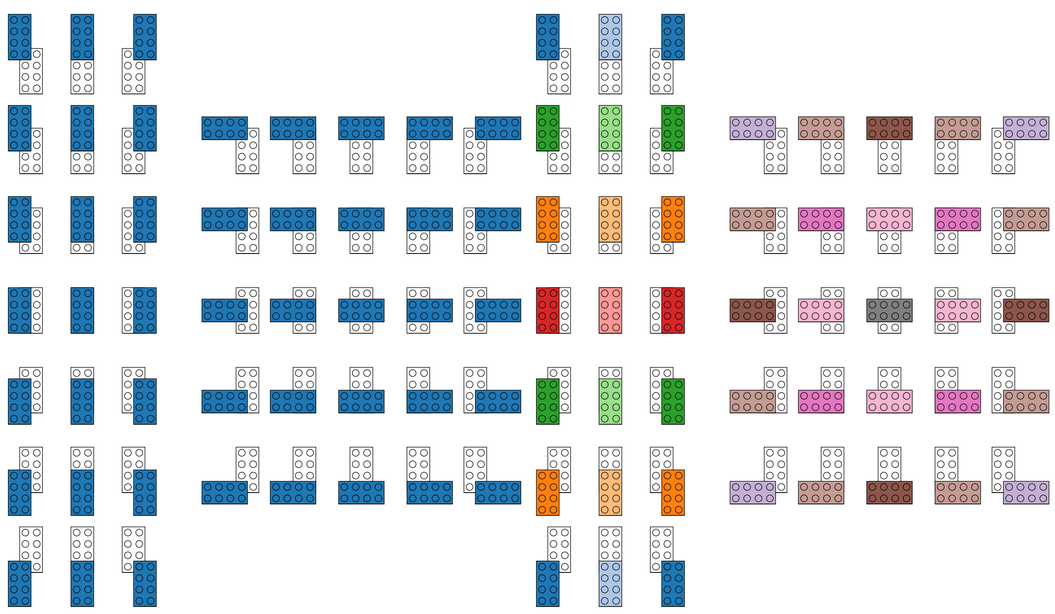


Fig. 4: Modelling system architectures through metadata

Principles of Construction Kits

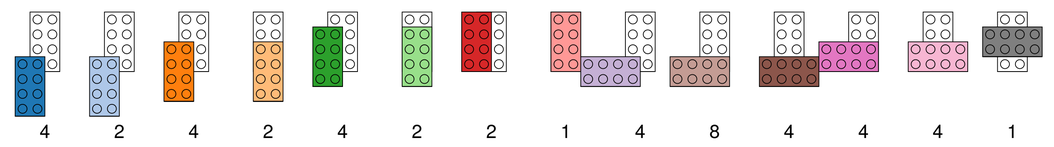
Examining the Solution Bias of Construction Kits

J.A. Gopsill
International Conference on DESIGN



The 46 combinations of $B_{2,4}(2)$

14 **morphologically** unique combinations of $B_{2,4}(2)$



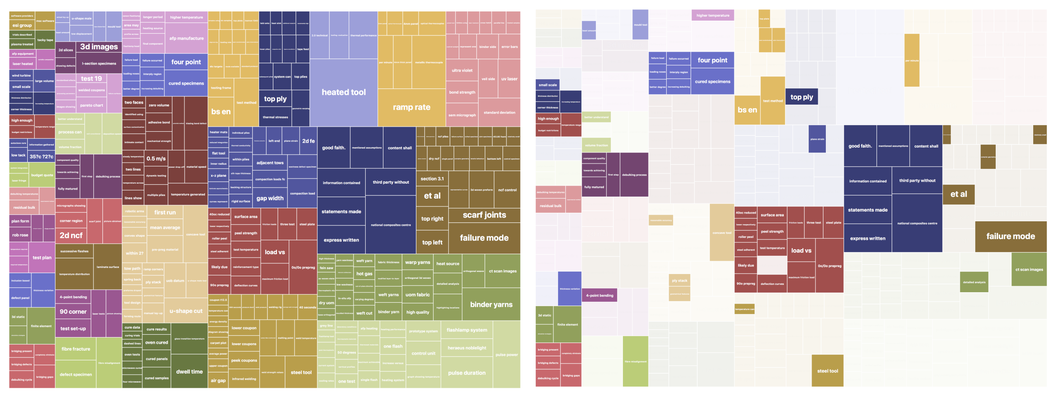
Number of pathways to each morphologically unique combination

Fig. 5: Analysing the combinatorics of construction kits

Competency Mapping

RCUK Researcher in Residence at the National Composites Centre

J.A. Gopsill



Organisation Competency Map

Expert Competency Map

Fig. 6: Automatic generation of competency maps through design report analysis