

I recently found CAD Exchanger after searching for 18 years for a software to convert my .iges NURBS models to .stp and .stl.



-Alan Zerobnick

ShoeSchool, Founder

### **How handcrafters adopt 3D printing to produce custom shoes**

It was 1981 when Alan Zerobnick founded ShoeSchool. He wanted to create the comfortable space where beginner shoemakers could work together with the professional crafters.



The whole shoe crafting process takes up to 5 days during which students complete several workshops. They produce shoes from scratch, nothing is pre-assembled. Together with Alan they think of the future footwear (anything from sandals to formal shoes) and identify the required materials, techniques and sketching the draft. It worth mentioning that there is no DIY kits, only raw materials, your own hands and the step-by-step guidance by Alan.



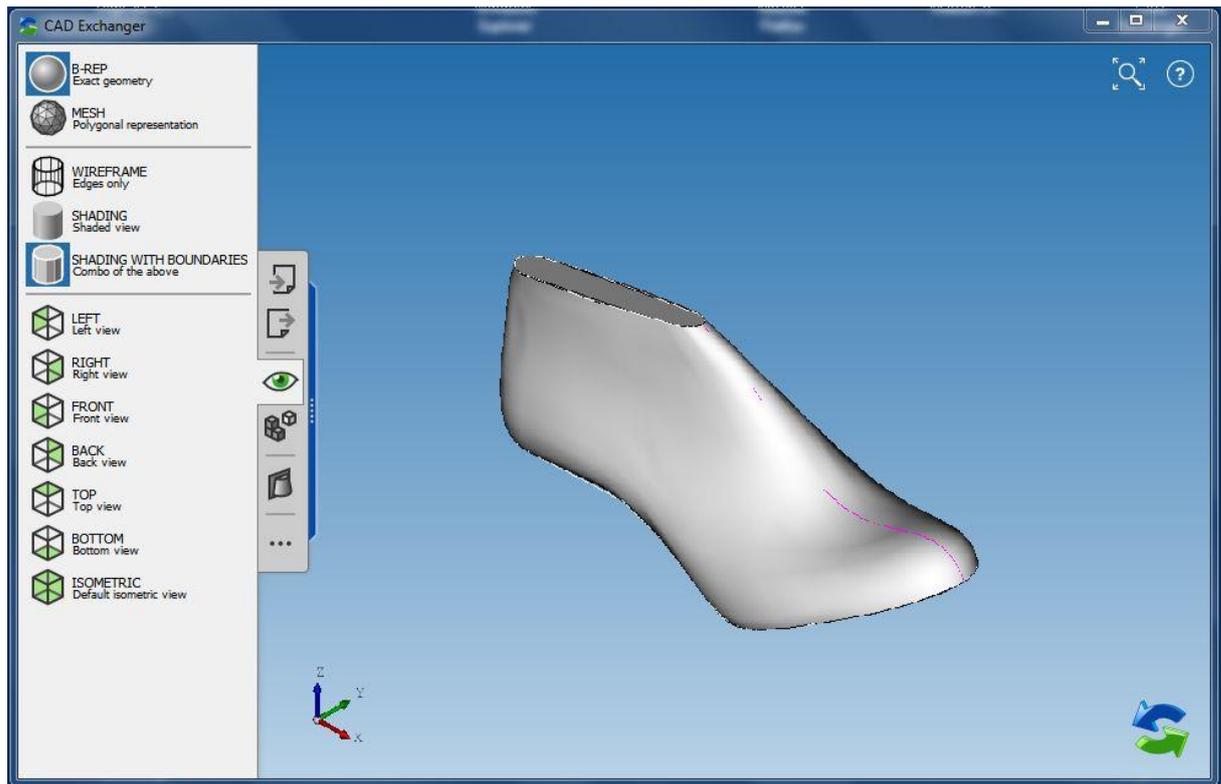
The most important thing in the custom shoe crafting is appropriate choice of the shoe last. Shoe last is a solid model of the foot and it is used for molding the materials later on. The correct size of the shoe last will determine the comfort level of the output footwear. That's why it is important to adjust the shoe last so that it exactly matches the foot. In this purposes Alan created his own software in the early 90s.



As Alan refers to himself he is “a retired 70 year old shoemaker with the passion to the technology”. His desire is to apply modern innovations to the ancient craft that has not been changing for hundreds years. The software allowed to bring digital models of the shoe lasts to life by using lathe and milling machines. This means that people were forced to manually post-process the shoe last which is quite resource-intensive.



The massive spread of additive manufacturing and 3D printing technology revealed the next logical step – to print shoe lasts and thus shorten and simplify the production cycle. Sounds good. But there was a significant pitfall. The software Alan developed produced the IGES files, which used NURBS (Non-Uniform Rational B-Spline) surfaces. This format is not suitable for 3D printing. It is pretty common situation in the additive manufacturing industry. Modern 3D printers are able to process simple polygonal data such as STL and sometimes OBJ, VRML, Collada and other polygonal mesh formats. In the case your CAD system fails to export such formats you will not be able to manufacture the model immediately. The conversion to the STL, OBJ or other polygonal format is needed.



CAD Exchanger successfully addresses those challenges with the help of the algorithms that process the IGES NURBS surfaces and heals the damaged edges and surfaces. It also validates the outcome to ensure its 3D printability. 'It has been a journey of 18 years to find a conversion solution for my .iges files to .stl.' –Alan claims. CAD Exchanger allowed to perform IGES to STL conversions and thus it's now easy to design, produce and print the shoe last.



Today Alan still hosts an educational classes and workshops aimed to future generations of shoemakers. He is teaching students to design various types of footwear and leverage 3D printer and other modern technologies.

For more information this is a direct link to the [ShoeSchool.com](https://ShoeSchool.com) website.