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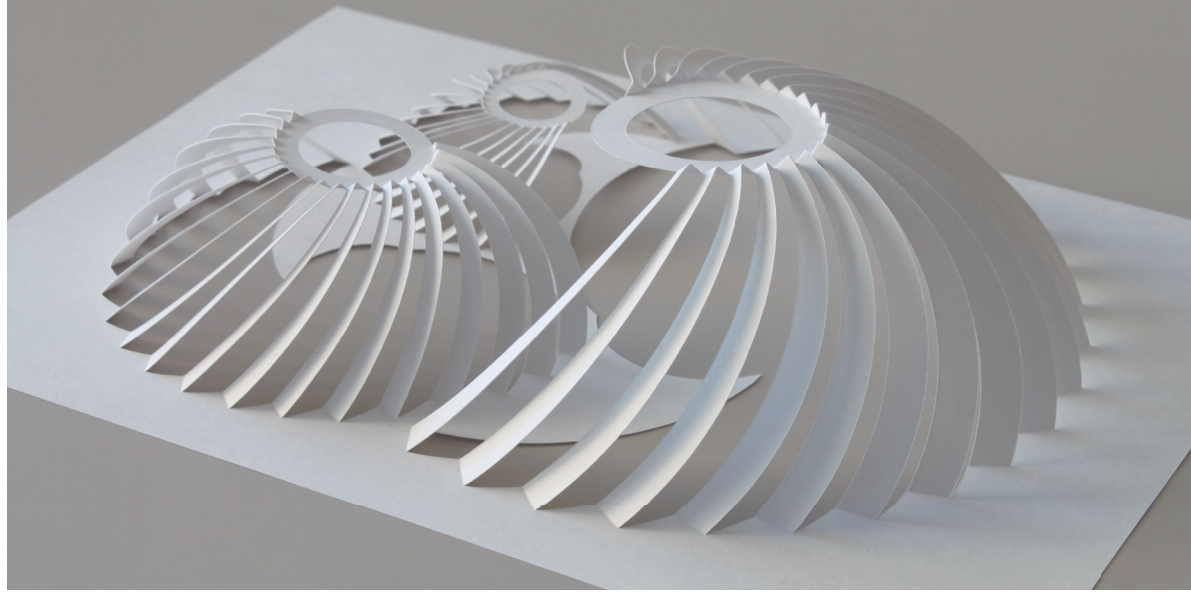
Yoshinobu Miyamoto is popular on Flickr. The Japanese architect and paper engineer has a strong following on the site, due to the beautiful images of his intricate paper creations which he frequently uploads. His regular job is as a professor at the Aichi Institute of Technology, Aichi, Japan where he lectures on spatial design, but his other passion lies in furthering his application of paper design.

RES examples and documents are posted at the links below.
https://www. ick r.com/photos/yoshinobu_miyamoto/albums/72157626010136184
https://www.researchgate.net/pro le/Y oshinobu_Miyamoto/contributions



ROTATIONAL ERECTION SYSTEM (RES): ORIGAMI EXTENDED WITH CUTS, DIGITAL FABRICATION EXPERIENCE

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Rhinoceros, Grasshopper, GeoGebra

Pop-up technique for cards and books has the long history over centuries both in the East and the West. It was used in preliminary design course taught by Josef Albers in 1927 at Bauhaus. The course method has spread all over the world from elementary schools to universities today. Ninety years after Bauhaus we push the educational design tool forward to a thinking tool for geometrical and structural design with digital fabrication technology and Rotational Erection System (RES). RES is a simple and e cient technique to make a self-standing 3D structure out of a single sheet of paper with systematic cuts and folds. The workshop attendants will make agile design experiments in structural morphology through the synthesis of the computational and the physical modeling.

Firstly the attendants will learn how RES works by folding ready-cut sample RES paper templates. They will understand that the constraints of the inextensible property of the material bring RES the bi-stable characteristics. Secondly they shall make their own models from the sample digital templates with cutting plotters. Lastly the teacher will instruct how to use software tools to generate the cut and fold patterns. The attendants will try to make their own design with the software tools. The duration of the session shall be 180 minutes long including tea break discussions.

Anyone who wants to learn how to make RES is welcome to join the session. The skill set with GeoGebra and digital fabrication tools are preferable but not necessary because the teacher could give sample ready-cut sheets to those without the skill set. Those with advanced skills in computation could get the software tools in GeoGebra from the teacher for their preparatory study prior to the workshop.