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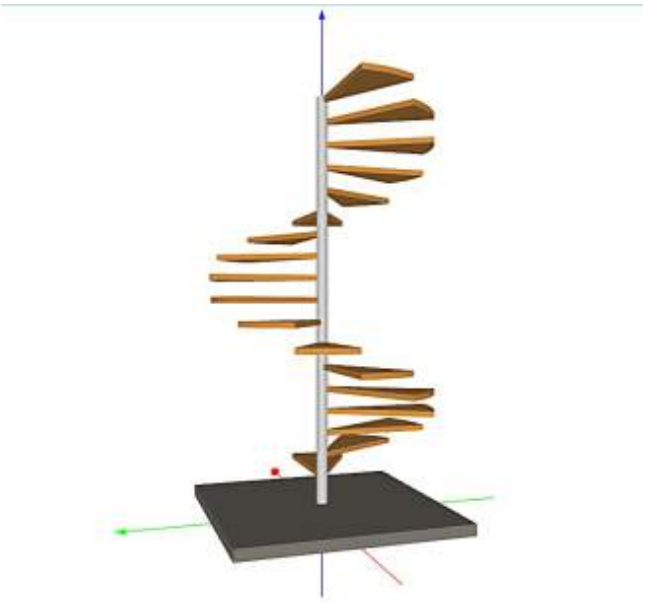
Reno firm brings computer education down from the cloud

A screenshot from the NVLab course, Hour of Code™ with Karel the Robot.

Pavel Solin, Ph.D., CEO of NVLab

The 3-D snowman designed by NCLab student R. Shaver can be viewed at 360 degrees.

Students at NCLab learn computer programming and 3-D modeling.



This spiral staircase, designed by NCLab student A. Nowak, can be viewed at a full 360 degree rotation.

A company operating in several countries and founded in Reno provides computer programming and 3-D modeling courses to students in elementary, middle and high school and to home-schooled children.

NCLab founder and CEO Pavel Solin, Ph.D., created NCLab based on a vision from his graduate school days: To make quality, open-source software available to the masses as an alternative to traditional commercial software. NCLab, which he created and incorporated in Nevada in 2011, promotes STEM (science, technology, engineering and mathematics) education through innovative, self-paced online courses in computer programming, 3-D modeling and other essential STEM subjects.

“For example, CAD software is too expensive for most schools to afford. This is wrong, in my opinion,” Solin explained. “On the other hand, there is an ocean of free CAD software in the cloud, except that it does not have a way to get into schools.” NCLab “is an interface between the regular user and the cloud. Thanks to NCLab, many thousands of students now have access to 3-D modeling and other STEM computing technologies that they otherwise could not use. It is thrilling and fun to do this,” Solin said.

NCLab has advantages for teachers. NCLab products are self-paced and self-graded courses. Students can gain computer programming and 3-D modeling skills, which are fundamental STEM skills that every engineer needs to know, without the teacher needing to be an expert in those fields.

"We develop courses that take care of the elementary instruction so that teachers do not need to explain the basics or check the students' work," Solin said. Instead, teachers can coach the students and provide higher-level instruction. NCLab has a patent for a critically important server-side algorithm that checks the students' 3-D models, so that the teachers do not need to do it themselves.

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Schools use NCLab courses as part of the regular curriculum as well as in classes before and after school. The largest after-school program in Paradise Canyon, Calif., has more than 160 students taking the courses. NCLab also has clients in other U.S. states and in Mexico, Australia, Philippines, the Czech Republic, England and Germany. The platform is translated into 10 languages.

NCLab is making inroads in Washoe County School District. Solin praises Dr. Dana Ryan, the district's Career & Technical Education director, as "a visionary administrator who can see the value of our work." Solin sees NCLab's products as based on the fundamentals and as linking 3-D modeling to mathematics. His products make learning 3-D modeling and coding easy for students.

The company has won the support of the Nevada legislature for a major expansion. In September 2016 NCLab will provide between 20,000 and 27,000 Google Chromebook computers as part of Nevada Ready 21. Students completing the required coursework in NCLab will receive a certificate signed by Gov. Brian Sandoval. "This program will expose many Nevada students to STEM, and I am extremely excited to be part of the process," Solin said.

"Computing is my passion," Solin notes. You can feel that passion as he explains that "It all starts with computer programming and with a little math, a little physics and even chemistry. There are equations everywhere. … With computing, you can understand what you cannot see. I would like to bring some of this to schools. It is sad that they have not had this before, because computing is exciting."

Besides leading his company, Solin is a professor of computational and applied mathematics at the University of Nevada, Reno. He teaches classes in calculus, differential equations and numerical analysis.

Solin has joined the growing trend of running his business through a virtual office. He has a staff of about 15, including 10 developers, two marketing people and a sales person, a director of education, and a COO.

As with many entrepreneurs, Solin has built his business with help from other people and organizations. “I am getting lots of support and positive feedback from the business community in Reno, especially through the Entrepreneur Assembly,” said Solin. “That is a nonprofit organization that helps people like myself who are not business people by trade to start and develop their own businesses. It is an incredible help.”

The College of Business at UNR also offers business courses for the public that Solin has found very helpful, especially one class named Entrepreneurship Jumpstart taught by Matt Westfield and Rod Hosilyk. Solin believes that “UNR is doing a really great job by helping people in the community to get the entrepreneurial mindset.”

Solin also praised Adams Hub for Innovation in Carson City. “If you are a small business, they can give you an office and mentoring. Someone like myself can really benefit from that, because these people will help you prevent mistakes,” he explained.

To spread the word about NCLab, the company gives presentations and staffs a booth at trade shows, particularly the International Society for Technology in Education show. It is the largest trade show in its field, with from 15,000 to 20,000 people attending. The company publishes papers and news releases on its products as well as relying on word of mouth. As Solin explains, “NCLab is different from other software in this area, so people talk about it.”

Solin has a realistic vision for his company’s future. “We need to solidify the foundation of the business before we expand too quickly. I am fortunate to work with really good business people who help me do that.”

With all of the emphasis on STEM education, NCLab seems well situated to prosper in the years ahead.

For more information, go to nclab.com/.