

# Industry 4.0 Requires Education 4.0

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## Abstract

The fourth industrial revolution is changing not only the way we live, but also the way we work. And the main changes are yet to come. According to McKinsey and Company [1], currently demonstrated technologies could automate 45 percent of the activities people are paid to perform. With automation taking place in most industries, education in areas such as computer programming, 3D modeling, statistics, data analysis and machine learning is essential. However, the current education system is not ready for the change. The National Science Foundation reports that computer programming and STEM jobs are growing rapidly, but the education system is lagging behind in the demand for workforce due to the lack of trained teachers [2]. In this presentation we summarize our findings from 8 years of active collaboration with a wide range of entities including K-12 schools, colleges, universities, workforce development agencies, government agencies, and employers. Our conclusions are compatible with the National Science Report [3]. We present an overview of the weak points of the current education system and introduce a new, active and student-centered approach which eliminates them. We also present its concrete implementation via courses where students learn at their own pace by solving problems, and show examples illustrating the positive impact on students.

## References

1. M. CHUI AND J. MANYIKA AND AND M. MIREMADI. Where Machines Could Replace Humans - And Where They Can't (Yet). McKinsey Quarterly, July 2016.
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3. NATIONAL SCIENCE FOUNDATION. Enough With The Lecturing. NSF News Release 14-064, 2014.