

# **Visualization of Polynomial Equations as a Creative Activity for the Public: Polynomiography for Innovations in Art, Math, Education, Science and More**

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Harry Potter books are said to encourage reading among the youth. The Rubik's Cube with its intricate design and mathematical connections became a best-selling puzzle. Can the visualization of polynomial equations through Polynomiography turn into a creative activity that would popularize math among the youth, bring innovations to art and design, bridge art and math, inspire mathematicians and educators, but also engage the general public? Polynomiography – I claim – has the potential to achieve all the above.

Dating back to the ancient civilizations, solving algebraic equations has been among the most fascinating and profound tasks. Even the case of square roots, arising naturally in algebraic or geometric settings, it has inspired deep discoveries, such as the irrational numbers, the complex numbers, and even sophisticated algorithms for factorization of numbers into primes. While polynomials remain to be fundamental entities in science and math as well as in education, never before in their history has there been a systematic development of algorithms to reveal the magnificent visual beauty behind solving polynomial equations. More so to liberate polynomials and to widen their scope of utility to a scale never imagined. Polynomiography is the algorithmic visualization of polynomial equations, turning the problem upside down and into a medium of expression, art, design, education, discovery, creativity and much more.

Polynomiography is a medium for all people.