



# Zachary Cotman

**B.S. in Engineering Physics (2019)**  
**Battelle Memorial Institute, Columbus, OH**

## **Describe your overall duties/ responsibilities as a Research Associate - Data Science:**

My position at Battelle is multi-faceted. I spend much of my time coding mathematical simulations and models in C++. I also contribute heavily to discussions about what and how we should model the underlying math, physics, and mechanics we are trying to capture. I also use the models, evaluate and analyze results, and write reports for one of our primary clients: The Department of Homeland Security Science and Technology Directorate.

## **Explain the skills/abilities that are required for being successful in your role:**

Critical reasoning skills and relational skills are the two most important abilities for succeeding in my current role. A solid background in general physical processes and the math which may be used to represent them is also extremely helpful. A general understanding of how the mathematics for these processes may be represented computationally (programmatically) is also useful as we do not use pre-packaged solvers. Knowledge of good coding practices is also

necessary. Finally, the ability to condense information and clearly present results, especially using charts and graphs, is extremely useful. In any field, being able to clearly communicate and articulate results is almost as important as being able to produce those results.

## **What advice would you give to students who are considering majoring in Engineering Physics?**

Engineering Physics can cover a broad range of possibilities. The Ohio State physics program teaches people to think critically and provides a wide basis of understanding of all kinds of physics which are behind all things science and technology related. This makes it widely applicable to many occupations. The program is not Abet Accredited, and I understand how that can be a barrier for many people wishing to enter a specific engineering field. However, I personally think that no engineer could do better than to pair a real study of physics with the study of their engineering specialty.

