

Machine Learning Aided Education Technology System

We helped **FutureEngineers** structure a compelling research proposal, securing over \$1 million in SBIR Phase II funding.

Clients:

Department of Education
NASA
FutureEngineers

Sector:

Education

Technology:

PyTorch
Attention Networks
LSTM
Data Science
Python
Big Data Pipelines

Resources:

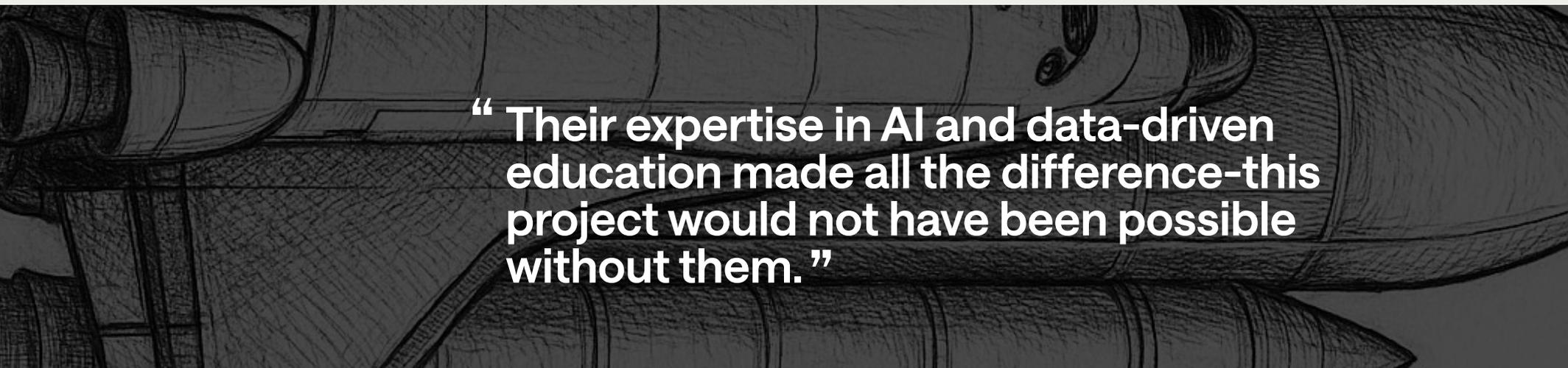
<https://www.nasa.gov/stmd-flight-opportunities/access-flight-tests/techrise/>
<https://www.futureengineers.org/>

Challenge: Modern education must evolve to leverage current technological resources effectively. Both the U.S. Department of Education and NASA sought innovative solutions to enhance K-12 STEM education, aiming to improve student engagement and learning outcomes through data-driven approaches.

Solution: Our team then led the development and execution of a randomized controlled trial, demonstrating that increased specificity in feedback enhances student performance, while a more positive tone boosts engagement. To meet this challenge, we built custom language models tailored for this educational context—models that outperformed contemporary LLMs in delivering effective, targeted feedback. Notably, our solution was developed before modern transformer-based LLMs became widely available, positioning it as a forward-thinking approach to AI-driven education.

FutureEngineers, NASA, and the Department of Education continue leveraging these insights to refine digital learning tools and improve student engagement at scale.

Special Note: This project had high security requirements which necessitated specific clearances for our team.



“ Their expertise in AI and data-driven education made all the difference-this project would not have been possible without them. ”