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| **TITLE:** | Machine Learning and Data Science Engineer |
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| **DEPARTMENT:** | U.S. Department of Energy/National Energy Technology Laboratory (NETL) |
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| **NETL CONTACT:** | Dirk Van Essendelft, dirk.vanessendelft@netl.doe.gov |
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| **DUTY LOCATION:** | Morgantown, WV |

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| **ACADEMIC LEVEL:** | **x** | PhD | **x** | MS |  | BS |  | Undergrad |  | Faculty |

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| **POSITION**  **INFORMATION:** | 1-year appointment; full time (40 hours per week) with the possibility of extension |
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| **CLOSING DATE:** | 3/31/2019 |
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| **WHO MAY BE**  **CONSIDERED:** | United States Citizens, LPRs, & Foreign Nationals with appropriate approval which includes F-1 OPT with EAD (STEM extension not valid), J-1 Exchange Visitor, and LPR with EAD |

**SUMMARY:**

The ML-CFD research group at the National Energy Technology Laboratory (NETL) has formed a new effort centered around the acceleration of Computational Fluid Dynamics (CFD) using machine learning and hardware acceleration (GPU’s, TPU’s, FPGA’s, etc). NETL has developed software links between MFiX (NETL’s inhouse CFD code) and Google’s TensorFlow. NETL is using TensorFlow to shift computational load to advanced accelerator hardware as well as develop ML based algorithms and/or hybrid algorithms that can significantly increase computational speed while maintaining accuracy. This is bleeding edge research that has already proven to dramatically reduce time to solution. NETL is looking for data scientists, software engineers, computational scientists, and/or applied mathematicians to help develop new machine learning closures, models, and algorithms to continue to reduce computational time to solution. Experience with high performance computing platforms and CFD software packages such as the NETL MFiX Suite (most preferred), ANSYS FLUENT, CPFD-Barracuda, or OpenFOAM is preferred. In addition, experience with TensorFlow (most preferred) or another ML software is highly preferred. An M.S./Ph.D. degree in engineering, computational science, mathematics or a closely related discipline is required. Working knowledge of Fortran and Python is strongly preferred.

**HOW TO APPLY:**

Applicants should apply through the Oak Ridge Institute for Science and Education (ORISE) program. The ORISE program provides opportunities for undergraduate students, recent graduates, graduate students, postdoctoral researchers, and faculty researchers to apply classroom knowledge in a real-world setting to learn about NETL’s core mission areas.

* Interested applicants should complete the online application at <http://www.orau.gov/netl/>. For questions or issues, please email both [Terry.Howard@orau.org](mailto:Terry.Howard@orau.org) and [Kerri.Fomby@orau.org](mailto:Kerri.Fomby@orau.org) .
* In the online application, **list** **Dirk Van Essendelft as your requested mentor.** This will associate your application with this research opportunity. Please send a CV to [dirk.vanessendelft@netl.doe.gov](mailto:dirk.vanessendelft@netl.doe.gov).
* If you have additional questions, please contact Patricia Adkins-Coliane, [Patricia.adkins-coliane@netl.doe.gov](mailto:Patricia.adkins-coliane@netl.doe.gov), who is the NETL Graduate Education Program Manager.

The participant(s) will be assigned to the program solely for the educational benefit it provides. The assigned project should not include activities that are reserved for federal employees nor should it require a participant to perform inherently governmental functions such as: supervise or mentor federal employees or federal contractor staff, hire or fire anyone; have budget, program management, or signature authority; carry an official job title; or function in any way as a representative of the federal government.