










Anthony S. Walker

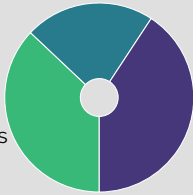
Ph.D. Candidate & Scientific Developer

CONTACT




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 Anthony Walker

COURSEWORK

 Thermal Fluid Sciences
 Mathematics
 Computer Science



EDUCATION

2018 **Penn State**
B.S. MECHANICAL ENGINEERING · Minor Computer Science  GPA: 3.41
2021 **Oregon State**
M.S. MECHANICAL ENGINEERING ·  GPA: 3.83
2024 **Oregon State**
PH.D. MECHANICAL ENGINEERING · Minor Computer Science  GPA: 3.83

SOFTWARE

OpenMP Arch Linux
Git Matlab
SQL Cantera
Ubuntu
Windows
Slurm
Office
Haskell
Python
Docker
Latex
CUDA
CSS
Java
Bash
Regex
Fortran
Markdown
x86
OpenCL

LANGUAGES

English | Native
French | ● ● ● ● ●

EMPLOYMENT

Aug 2016–May 2018


Undergraduate Research Assistant

PENN STATE · Erie PA 

- Developed software for modeling of piezo-electric power generation in turbulent flow.

May 2017–Aug 2017


Test Stand Engineering Intern

BELL HELICOPTER · Fort Worth TX 

- Developed a troubleshooting guide for repair and maintenance of test stand systems.

Sept 2018–Present


Graduate Research Assistant

OREGON STATE UNIVERSITY · Corvallis OR 

- Development of a heterogeneous coupled GPU/CPU solver to reduce latency and accelerate simulations of multi-dimensional PDEs.
- Open source development within Cantera to accelerate chemical kinetics with advanced numerical techniques.

April 2022–Present


KP-SAM Scientific Developer Intern

KAIROS POWER · Alameda CA 

- Development and maintenance of a package to automatically generate input files for a nuclear design code.
- Development of automatic verification software for the core-design team.
- Various miscellaneous responsibilities such as database setup, numerical benchmarking, and automated memo generation.


PUBLICATIONS

Applying generalized preconditioning to enable detailed kinetic modeling of SAF combustion and atmospheric evolution of products

 Walker, Anthony S. Speth, Raymond L. Niemeyer, Kyle E.


 2024  Manuscript in preparation



Extending generalized preconditioning to accelerate simulations of coupled reactor and surface systems

 Walker, Anthony S. Speth, Raymond L. Niemeyer, Kyle E.

 2023  Manuscript in preparation



Generalized preconditioning for accelerating simulations with large kinetic models

 Walker, Anthony S. Speth, Raymond L. Niemeyer, Kyle E.

 2022  PROCI: Proceedings of the Combustion Institute, <https://doi.org/10.1016/j.proci.2022.07.256>

The two-dimensional swept rule applied on heterogeneous architectures.

 Walker, Anthony S. & Niemeyer, Kyle E.

 2021  MDPI: Mathematical and Computational Applications, <https://doi.org/10.3390/mca26030052>

Applying the swept rule for solving explicit partial differential equations on heterogeneous computing systems

 Magee, Daniel J & Walker, Anthony S & Niemeyer, Kyle E

 2020  Journal of Supercomputing, <https://doi.org/10.1007/s11227-020-03340-9>

