Michael Raba

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Education

University of Kentucky Spring 2025
M.Sc. Mechanical Engineering *Lexington, KY*

University of Kentucky Spring 2019
B.A. Applied Mathematics *Lexington, KY*

Experience

Research Assistant, NSF Fall 2020 – 2023
University of Maryland (PI: Prof. Christoph Brehm)
- Reduced Order Modeling of Moderate Reynolds Number Flows in a Rotating Pipe

Teaching Assistant, ANOVA and DOE Lab Spring 2023
University of Kentucky *Lexington, KY*
- Guided students through lab equipment: wind tunnel, strain gage, beam deflection, LabView data acquisition

TA for Thermodynamics II Fall 2020
University of Kentucky *Lexington, KY*

TA for Fluid Mechanics I Spring 2018
University of Kentucky *Lexington, KY*

Research Assistant, Aerospace Eng. Dept. Summer 2018
University of Kentucky *Lexington, KY*
- Optimized air filter designs using STAR-CCM+; mesh refinement and Linux toolchain

Skills

Parallel Computing: MPI, OpenMP (C++, Fortran2018, Julia, Python, MATLAB)

Languages & Libraries: C++ STL, Boost, Eigen, ISO C++, interfaces, caching/memoization

Interoperability: Python-C++-Fortran-Julia mixed stacks

Debugging/Profiling: Valgrind, GDB, VTune, TotalView, gpdrftools

Tools: Git, CI/CD, Linux sysadmin (CentOS, Arch, Ubuntu)

Engineering Software: Ansys Workbench, STAR-CCM+, LabView

Math/Tech Topics: Signal Processing, ROM, Turbulence Theory, Matrix Methods