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)   *Remote*
  – 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