Kevin J.

About

Kevin loves teaching and is deeply passionate about learning and exploring new ideas. Physics has always been at the heart of his curiosity. Kevin enjoys uncovering how the world works and sharing those insights in a way that inspires others. Kevin believes that teaching is not just about mesmerizing concepts or solving equations but about helping students see the beauty of science in everyday life, and using the knowledge to solve problems. His love for physics led him to the University of Illinois at Urbana-Champaign, where he earned his Ph.D. in Mechanical Engineering with a focus on Computational Science and Engineering. His research explored computational fluid mechanics and heterogeneous computing, developing advanced numerical methods and high-performance simulations. After his academic journey, Kevin has worked as a Principal Engineer and solver developer in industry for over nine years, specializing in modeling and solving real-world engineering problems related to reactive flow and heat transfer. His work combines deep research with hands-on coding in Fortran, C++, CUDA, and Python. At heart, Kevin is both a teacher and a researcher, and he is curious about everyday phenomena and eager to explain them through the lens of physics. He finds joy in guiding students to ask questions, think critically, and discover the excitement of understanding the world around them.

What I Teach

- Physics, Basic Scientific Programming

Education

- Ph.D. in Mechanical Engineering with Computational Sci. and Engr. Option, UIUC
- M.S. in Theoretical and Applied Mechanics, UIUC
- M.S. in Mechanical Engineering, Lehigh Univ.

Experience

- **Research Assistant (Ph.D. studies, UIUC)**: Developed a GPU-accelerated in-house Navier–Stokes solver; parallelized it with MPI and CUDA to run on multiple GPUs; extended its capabilities by implementing advanced modules, including Magnetohydrodynamics, Two-way Coupled Lagrangian Particle Tracking, Large Eddy Simulation (LES), and Generalized Newtonian Fluids.
- **Principal Engineer & Solver Developer (Industry)**: Over nine years of experience in computational modeling of reactive flows, combustion, and heat transfer. Specialized in applying numerical methods and high-performance computing to solve challenging engineering problems.

Interests

- **Cooking** - Kevin enjoys experimenting in the kitchen, especially with Chinese cuisine. He loves watching cooking videos, trying out new recipes, and sharing delicious meals with family (with the occasional "creative surprise" dish that doesn't turn out as expected, but he never gives up!).
- **Exploring New Technologies** - Always curious, Kevin enjoys learning about and testing out the latest tech trends, from software tools to gadgets.
- **Gaming (when time allows)** - Kevin has always loved PC games, though these days most of his free time is joyfully dedicated to being a dad since 2021.