ENGR 491 – 523  POWER-AWARE HIGH PERFORMANCE COMPUTING TECHNOLOGIES IN ADDRESSING REAL WORLD ENGINEERING APPLICATIONS

Our Grand Challenge
Hardware/software co-design for real world engineering applications with a limited power budget.

Project Goals
- Design and build a computer that is suitable for a given engineering application with up to 3000W power budget.
- Optimize real world engineering applications on the computer.
- Benchmark and prepare a technical report.

Key Challenges:
- Learn the latest high performance computing technologies.
- Learn the basics of the domain of the real world application or even a new programming language.
- Multidisciplinary collaboration and teamwork.
- Times competition against teams all over the world.

Impact to Society
Power usage has become a critical constraint in the design of modern processors. Building power-aware computing systems via co-design is a promising approach to maximize the power-performance efficiency for next generation high-end computing systems as well as personal computers. The engineering practice and methods obtained in this project could potentially contribute to more power efficient devices everyone uses in the future.

Faculty Mentors
Dr. Jian Tao

 Desired Engineering Majors
All majors with a strong programming background.