A. JAMES CLARK SCHOOL OF ENGINEERING

Postdoctoral Research Associate in Agonafer Lab on Physics-informed Neural Network (PINN) PDE Solver

Department of Mechanical Engineering and Materials Science

enme.umd.edu

The Department of Mechanical Engineering at University of Maryland, College Park announces an open postdoctoral position in Agonafer's research group. In this project, we will build a software tool for thermal-fluids modelling of novel single and two-phase cold plates for thermal management of microprocessors in servers and develop reduced order modeling tools for server/rack level and datacenter level modeling. The novel tool built by our team will include a physics informed neural network (PINN) based PDE solver as an alternative for commercial CFD tools to run high-fidelity thermal simulations.

Anticipated responsibilities include leading the research effort to develop the PINN based PDE solver and coordinate with other teams and participants in the project, guiding the graduate students working on the project, preparing documentation for the software and reports and presentations for the quarterly update meettings.

Candidates are expected to be self-motivated, with the ability to work independently and as an integral member of a team. **The Postdoctoral appointment would entail performing research, mentoring of students, and helping with project management and fundraising activities including presentations to sponsors and preparation of proposals.** Strong oral and written communication skills, as evidenced by refereed journal publications and conference presentations, are essential.

Required qualifications:

- Ph.D. in Mechanical Engineering, Materials Science and Engineering, Chemical Engineering, Chemistry, Applied Physics, or a closely related field.
- Extensive background in heat and mass transport, machine learning, neural networks, physics informed neural networks, CFD simulations (OpenFOAM, Ansys, COMSOL).
- Experience in Python, Tensorflow, Pytorch, and other ML and Neural network packages is required.
- A strong publication record in relevant journals, and excellent verbal and written English communication skills are required.
- The ability to work well in a self-paced, independent manner, while working well in cooperation with team members and partners is required.

More Information:

- Please visit University of Maryland College Park Postdoctoral affairs page to learn more about life of postdocs at UMD – www.gradschool.umd.edu/postdocs
- Employee benefits: www.gradschool.umd.edu/faculty-and-staff/postdoctoral-scholars/postdoctoral-appointments/postdoctoral-associates

To Apply:

Three to five letters of reference in PDF format, CV and a research statement should be sent to:

Dr. Damena Agonafer: agonafer@umd.edu