RUNMIN ZHAO

Multi-Talented, Research-Tailored, Learning-Driven, Result-Oriented

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EDUCATION

Master Student
Power Engineering & Engineering Thermodynamics
School of Energy & Environment, Southeast University
Sep. 2017 – Present Nanjing, China

- Supervised by Prof. Hua QIAN
- Study in Numerical Analysis, Advanced Thermodynamics, Advanced Heat Transfer, Advanced Fluid Mechanics, Numerical Heat Transfer, Multiphase Flow Mechanics, Indoor Air Quality
- Intensive study in Computational Fluid Dynamics (CFD)
- Working with team on the CFD predictions for room air distribution
- Working with team on the collection of microorganism and particles, measurements of CO_2, PM2.5, Formaldehyde, VOCs in civil buildings.
- Providing technical assistance (mainly algorithm related) for master&PhD students from different majors e.g. Architecture, Information Science, Nuclear physics
- CFD Development Engineer Intern, SIMPOP, Shanghai

B. Eng.
Built Environment and Equipment Engineering
School of Energy & Environment, Southeast University
Sep. 2013 – Jun. 2017 Nanjing, China

- Study in Heating, Ventilation and Air-conditioning(HVAC) and basic CFD
- First Violin of SEU Sinfonietta
- Providing essential training in High School English and IELTS Listening & Reading

ACHIEVEMENTS

- Placed in top in the Advanced Heat Transfer class, 95/100 (15' over the average score)
- Placed in top 10% in the undergraduate study, GPA 3.78/4.8
- Oral report to Prof. Peter. V. Nielsen, with ability in literature review recognized.
- Accompanying artistic translator for Prof. Peter. V. Nielsen, with language skills and aesthetic knowledge recognized.
- Oral report to Prof. Yuguo Li, with ability in CFD simulation and data-analysis recognized.

SKILLS

Effective & Cross-border Study ●●●●●
Academic Communication ●●●●●
IELTS 7.5 (Listening 9, Reading 8)
Page-formatting using LaTeX ●●●●●

Indoor Air Quality Related Instruments ●●●●●

- TSI Aerodynamic Particle Sizer (APS) Spectrometer 3321
- TSI DUSTTRAK II Aerosol Monitor 8530
- Impactors for Particle Sampling

CAE/CFD Tools ●●●●●

- Open Source Tools: FreeCAD, OpenFOAM, ParaView, Blender
- Commercial Tools: Solidworks, AutoCAD, ICEM CFD, Ansys Meshing, Ansys FLUENT
- Professional mesh generation using snappyHexMesh, blockMesh & ICEM
- OpenFOAM/FLUENT usage, set-up, boundary conditions, solving & post-processing
- Batch processing of OpenFOAM cases using bash language

Scientific Programming ●●●●○
Python and C++

CFD Programming ●●●●○

- Knowledge in Finite Volume Method, Discretization, Boundary Conditions, SIMPLE/PISO Loop, Turbulence, DPM model
- UDF programming in Ansys Fluent
- Solver & function object implementation of OpenFOAM

Design Optimization ●●●○○

- Inverse design and multi-objective optimization with DAKOTA and OpenFOAM

Deep Learning ●●○○○

- Building Convolutional neural network using Tensorflow and Keras

HONORS & AWARDS

- Silver Award, Teenage Violin Competition in Jiangsu Province, 2012
- Individual Scholarship for a high score in Engineering Drawing, 2013
- Individual Scholarship for a full score in Heat Transfer, 2014
- Zhou Yuan Academician Scholarship, SEU, 2015
- Exellent Paper Award in IEHB 2019, Nanjing, China

PROJECTS & PUBLICATIONS

Zhao, R., Qian, H., Liu, L., Zheng, X. (2020). Comprehensive performance evaluation of a novel Aaberg exhaust system reinforced by a swirling jet. Building and Environment, 167, 106451.

- Self-implemented incompressible solver buoyantBoussinesqScalarSimpleFoam for the simulation of buoyant gas dispersion
- Proceeding selected as Exellent Paper in IEHB 2019
- Research article indexed by SCI

Multi-objective optimization of a traditional Aaberg hood using GA method

CFD simulation of buoyant plumes in thermally stratified environments (Bachelor's Degree Thesis)