QI ZHANG

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PROFILE SUMMARY

- Software engineer bringing 2+ years experience in academia with multiple programming languages.
- Knowledge of the different machine learning algorithms with various applications.
- Supportive and enthusiastic team player dedicated to efficient difficult problem solving.
- Willing to take ownership of core components.

HIGHLIGHTED SKILLS

- Parallel, Object Oriented Programming
- Java, C/C++, Python, Fortran, Scala, MySQL
- Hadoop, Spark
- Various machine learning algorithms
- Machine learning APIs (i.e. sklearn, TensorFlow)
- SDLC tools: git and SVN

PROFESSIONAL EXPERIENCE

Institute of Computational Engineering Sciences, University of Texas Austin, TX
Software Engineer and Research Associate March 2016 – September 2017

Project: Machine learning feature selection in turbulence wall-pressure modeling

- Designed and implemented multiple features for SU2 code (CFD code) on parallel clusters
- Designed and implemented different unit tests (C/C++)
- Implemented various post-processing tools (Python & Java) for data parsing and statistical analysis
- Speeded up data generation 100+ times for machine learning studies at the Sandia National Lab

PSAAP2 Center, University of Illinois Urbana, IL
Software Engineer and Research Associate May 2014 – March 2016

Project: Performance Analysis and Optimization of a High-Order MPI CFD Application

- Analyzed the performance of the MPI large-scale parallel CFD solver using TAU and PAPI
- Identified performance bottlenecks to be large quantity of memory accesses and the lack of vectorization
- Optimized the CFD codes and obtained a 50%+ reduction in the number of memory loads

Project: Exascale Simulation of Plasma-Coupled Combustion

- Developed a parallel 2-D/3-D compressible Navier-Stokes equation solver, 5,000+ lines with multiple features
- Improved large-scale data post processing 5+ times faster using novel algorithms in filtering non-physical data
- Jet-in-cross flow simulation results highlighted on the 2014 DOE PSAAP2 annual report

Project: Actuator type and placement for jet noise reduction

- Developed, tested and debugged a high-order finite volume numerical toolkit, 3,000+ lines
- Performed high-speed jet engine and aerodynamics flow simulations in different supercomputing platforms
- Analyzed the simulation data in both time and frequency domain via Fast Fourier Transform (FFT)

EDUCATION

University of Illinois at Urbana-Champaign, Urbana, IL **GPA 4.00/4.00**
Ph.D. in Aerospace Engineering (Focus: Computational Science and Engineering)

Fudan University, Shanghai, China **GPA 3.89/4.00**
B.S. in Theoretical and Applied Mechanics (Minor: Computer Science)

PUBLICATIONS, HONORS & AWARDS

- 5 top journal articles and 15 conference proceedings (150+ citations)