YAOGUANG ZHAI

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RESEARCH INTEREST

- Search and optimization algorithms with a focus on nonlinear optimization.
- Learning-based design and optimization in molecular dynamics modeling.
- Applications of search and optimization methods, including SMT solver and chip design.

EDUCATION

- **University of California, San Diego** *Sep.2018 - Present*
  Ph.D. student in Computer Science and Engineering, advised by: Sicun Gao and Francesco Paesani
- **University of California, San Diego** *Sep. 2016 - June 2018*
  M.S. in Computational Science, Mathematics, and Engineering (CSME)
- **Royal Institute of Technology (KTH), Stockholm, Sweden** *Sep. 2006 - Nov. 2008*
  M.S. in Sustainable Energy Engineering

WORK EXPERIENCE

- **Amazon Development Center U.S., Inc.** *Jun. 2022 – Sep. 2022*
  Applied scientist intern on optimization algorithms for the nonlinear SMT solver
- **Lawrence Livermore National Laboratory** *Jun. 2020 – Sep. 2020*
  Data scientist intern on Gaussian process and active learning algorithms
- **Interpreta** *Jun. 2019 – Sep. 2019*
  Data scientist intern on time series data analysis
- **Veritone Inc.** *Jun. 2018 – Sep. 2018*
  Data scientist intern on speech and speaker recognition modeling
- **Siemens Industrial Turbomachinary AB** *Dec. 2008 – Sep. 2016*
  Mechanical engineer on mechanical integrity analysis and dynamic analysis

PUBLICATIONS

- *Zhai, Y., Qin, Z., Gao, S.,* Sample-and-Bound for Non-Convex Optimization, under submission 2023
- *Zhai, Y., Caruso, A., Bore, S.L., Luo, Z., Paesani, F.,* A "short blanket" dilemma for a state-of-the-art neural network potential for water: Reproducing experimental properties or the physics of the underlying many-body interactions? *Journal of Chemical Physics* 2023
- *Zhai, Y., Gao, S.,* Monte Carlo Tree Descent for Black-Box Optimization, *Advances in Neural Information Processing Systems*, 2022
- *Zhai, Y., Caruso, A., Gao, S., Paesani, F.,* Active Learning of Many-Body Configuration Space: Application to the Cs Water MB-nrg Potential Energy Function as a Case Study, *Journal of Chemical Physics*, 2019
- *Zhai, Y., Goetz, A.,* Parallel Implementation of Machine Learning Based Many-Body Potentials on CPU and GPU, *ACM/IEEE Supercomputing Conference*, 2018
- *Zhai, Y., Bladh, R., Dyverfeldt, G.*, Mistuned Aeroelastic Stability Assessment of an Industrial Compressor Blade, *Journal of Turbomachinery*, 2012

SKILLS

- Languages: C++, Python, FORTRAN, SQL, Matlab, ABAQUS, ANSYS
- Platforms: OpenMP, CUDA