

Noam Stanislawski

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EXPERIENCE

R&D Software Engineer

November 2023 – Present

ESI Group (Keysight Technologies)

San Diego, CA

- Member of vibro-acoustic software team building robust, modularized software within the solver and GUI.
- Leveraged parallelization and multithreading libraries to improve solver execution speed and throughput.
- Developed expansion of multiple API libraries for graphical enhancements and new algorithmic solutions.
- Worked in a small team with flexible roles, frequently collaborating with global team members.

R&D Software Intern

May 2022 – August 2022

Sandia National Labs

Albuquerque, NM

- Designed and implemented parallel performance models, optimizing HPC efficiency and enhancing on-node and off-node benchmarks.
- Developed large-scale sparse matrix-vector products using CSR matrix storage format, contributing to performance improvement.
- Conducted in-depth analysis of execution speed, bandwidth, and network communication's impact on overall system performance.

REU Researcher

June 2021 – August 2021

South Dakota State University

Brookings, SD

- Employed Intel oneAPI VTune Profiler to analyze cache bottlenecks in benchmarks with Hyper-Threading, providing performance optimization insights.
- Collaborated with SDSU's Research Cyberinfrastructure team, recommending use cases for researchers.

PROJECTS

Performance Modeling for Large-Scale Linear Applications | C++, Trilinos, MPI

Summer 2022

- Created a performance model testing the efficiency of sparse matrix vector products calculated with Trilinos.
- Ran and verified data from various benchmarks in order to find computational limits for linear solvers.
- Wrote research paper comparing the data from the model to real problems utilized by Sandia scientists.

Tackling AI Bias with GANs

Fall 2021

- Researched the potential of a GAN-structured model to combat biases found within traditional CNNs.
- Reviewed various cases where human biases corrupted AI models so far that they were scrapped entirely.
- Suggested a twofold approach of creating AI models with higher levels of scrutiny alongside sociological approaches to bias training.

HPC Optimization Using Hyper-Threading | Intel OneAPI, MPI

Summer 2021

- Tested HT efficacy using the NPB HPC benchmarking suite monitored by Intel's VTune Profiler.
- Compared both front-end and back-end metrics (port utilization, cache misses) for statistical analysis.
- Created concrete guidelines for HT utilization dependent on research software's parallelized code and vectorization.

SKILLS

Languages: C/C++, Python, QML, Java, Visual Basic 4.0, HTML/CSS, MATLAB

Libraries: Qt, Intel OneAPI, MPI, Boost, Slurm, SQLite

Tools: Git, CMake, Conan, Docker, Jira, Ninja, JUnit

EDUCATION

William & Mary

Williamsburg, VA

Bachelor of Science in Computer Science, 2023