Nicholas Pickering

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Professional Summary

Software engineer specializing in high-performance distributed systems. Proven experience building production C++ systems with sub-second latency requirements, architecting scalable data pipelines for real-time processing, and deploying ML models on HPC clusters. Strong foundation in distributed computing, system optimization, and cross-platform integration. Experienced leading technical teams on $30M+ infrastructure projects and implementing AI solutions across multiple domains.

Experience

Simulator Engineer — **Westinghouse Electric Company LLC.**
Full-time — June 2024 – Present

- Developed production-quality C++ interface code with rigorous testing and performance optimization.
- Implemented automated infrastructure provisioning and network configuration systems, reducing deployment costs by $15,000 per project through standardization and code reuse across multiple installations.
- Served as primary technical liaison for international clients in China, translating complex technical requirements and system behaviors to non-technical stakeholders and managing escalations during on-site installations.
- Managed database systems (SQL and NoSQL) for storing simulation state, configuration data, and performance metrics across distributed environments.

Software Engineer — **MOSIMTEC**
Full-time — Mar 2022 – Dec 2022

- Developed predictive models and data analytics solutions using Python, statistical analysis, and simulation software to optimize operational efficiency for healthcare and retail clients.

Projects

Distributed CNN Training on HPC Infrastructure — **2025**

- Designed and implemented scalable CNN training pipeline in Python with PyTorch, executing on HPC clusters using SLURM for job scheduling and resource management.
- Analyzed strong and weak scalability characteristics across increasing parallelism levels, optimizing data loading and gradient synchronization for distributed training efficiency.

AI Agent Development in C++ (Multiple Projects) — **2023 – 2024**

- Implemented Pukoban puzzle-solving agent using search algorithms and heuristics.
- Built Connect 4 game AI with minimax algorithm and alpha-beta pruning.
- Developed constraint satisfaction problem solver for crossword puzzles, implementing forward checking and backtracking with data structure design for efficient constraint propagation.

Education

BS in Modeling and Simulation Engineering — **2019 – 2024**
Old Dominion University — GPA: 3.8/4.0
Concentration in Advanced Simulation Techniques (Artificial Intelligence, Distributed Computing, Visualization)

Technical Skills

- **Systems Programming:** C++, Python, Java, Rust
- **ML/AI Technologies:** PyTorch, scikit-learn, CNN Architectures, Model Training & Deployment, SLURM
- **Distributed Systems:** Real-time Data Streaming, TCP/IP & UDP Protocols, Distributed Synchronization
- **Development Tools:** Git, GitHub Actions (CI/CD), Performance Profiling, Version Control

Awards

National Training and Simulation Association (NSTA):

- Graduate Scholarship Award in Modeling & Simulation (2024)