Ye Htet

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Education

Washington University in Saint Louis (GPA: 3.8/4.0) **Aug 2021 – Present**
Ph.D. Candidate in Computer Science *Saint Louis, MO*

Illinois College (GPA: 4.0/4.0) **Aug 2018 – May 2021**
B.Sc. in Computer Science *Jacksonville, IL*

Research Fields

Machine Learning Acceleration, Artificial Intelligence, Computer Architecture, Parallel Computing, Software Development

Skills

Programming Languages: Python, C/C++, Bash, CUDA, OpenMP

Tools: PyTorch, Lightning, ONNX, sklearn, wandb, Numpy, Pandas, Matplotlib, Scipy, Git, Docker, Linux

Research Experience

Washington University in Saint Louis **Aug 2021 – Present**
Research Assistant (Advisor: Dr. Jeremy Buhler) *Saint Louis, MO*

- Applying model compression method such as pruning and quantization to enable the realistic deployment of the neural network models for real-time localization using a raspberry pi 3B+ test-bed in **C++**. (*current project*)
- Led the development of a full deep learning pipeline in **Python** for training and testing physics-guided neural network models for a scientific application (GRB localization) using **Pytorch Lightning** and **wandb**.
- Investigated input data analysis to the pipeline identifying the impacts of uncertainties in the detector measurements leading to significant improvement in localization accuracy.

Publications

- **Ye Htet**, Marion Sudvarg, Jeremy Buhler, Roger D. Chamberlain, and James Buckley."Localization of Gamma-ray Bursts in a Balloon-Borne Telescope". The First Workshop on Enabling Predictive Science with Optimization and Uncertainty Quantification in HPC (EPSOUQ), November 2023. Held in conjunction with SC 2023.
- **Ye Htet**, Marion Sudvarg, Jeremy Buhler, Roger D. Chamberlain, Wenlei Chen, James H. Buckley for the APT collaboration. "Prompt and Accurate GRB Source Localization Aboard the Advanced Particle Astrophysics Telescope (APT) and its Antarctic Demonstrator (ADAPT)". In Proc. of 38th International Cosmic Ray Conference – PoS(ICRC2023), volume 444, pages 956:1–956:9, July 2023.
- Marion Sudvarg, **Ye Htet**, Roger D. Chamberlain, Jeremy Buhler, Blake Bal, Corrado Altomare, Davide Serini, Mario Nicola Mazziotta, Leonardo Di Venere, Wenlei Chen, James H. Buckley for the APT collaboration. "Front-End Computational Modeling and Design for the Antarctic Demonstrator for the Advanced Particle-astrophysics Telescope". In Proc. of 38th International Cosmic Ray Conference – PoS(ICRC2023), volume 444, pages 764:1–764:9, July 2023.

Projects

- **Quantifying different object detection architectures on ImageNet**: A comprehensive research for a class project on various object detection techniques surveying influential papers. Took several models pre-trained on COCO and performed transfer learning/fine-tuning to apply them to ImageNet images.
- **Bank Conflict Latency of Convolutions on GPUs**: A class research project to investigate the bank conflicts of convolution algorithms on the GPU and an asymptotic analysis of the corresponding latency on shared memory using the Discrete Memory Machine Model (DMM)

Honors & Awards

- **Thomas Smith Prize**: Honor Prize for first year excellence in Mathematics.
- **Levy, Ray & Shoup Scholarship**: Scholarship Award for excellence in Computer Science.
- **Alpha Lambda Delta**: National Honor Society to recognize the high academic achievement of first-year students.