NATHAN C. THOM

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EDUCATION

University of Nevada, Reno *August 2019 - May 2024*
Doctor of Philosophy with a focus in Computer Vision and Explainable AI
Department of Computer Science

RELEVANT SKILLS AND SOFTWARE

Programming Languages: Python, C++, C, and Latex

Libraries and Packages: PyTorch, PyTorch-Lightning, TorchMetrics, Torchvision, Tensorflow, Keras, Weights and Biases, Numpy, Pandas, Matplotlib, Seaborn, Scikit-Learn, OpenCV, PIL, Conda, Jupyter

Other Skills and Software: Leadership, Academic Writing, Data Analysis, Object Oriented Programming, Git, Jupyter Lab, Anaconda, VSCode, JetBrains, Windows, Linux

PROJECTS

Research Projects:
DoppelVer

- Presented a novel collection of face images with challenging evaluation protocols.
- Addressed limitations in current facial recognition benchmarks.
- Utilized generalized image embeddings for hard-negative pair mining.

SmartRecon/FlexHash

- Designed a hybrid locality-sensitive hashing algorithm for IoT device identification.
- Achieved up to 98% accuracy in identifying identical devices using only a single packet captured from the network
- Enabled real-time identification in the presence of background noise.

Other Projects:
OpenSphere Lightning: Conversion of OpenSphere to PyTorch Lightning and Hydra

UNR Deep Speech: Speech Recognition for Robots and Autonomous Vehicles

RELEVANT COURSEWORK

Introduction to Machine Learning
Interdisciplinary Data Science
Natural Language Processing
Machine Learning Applications
Representation Learning
Data Structures
Analysis of Algorithms
Image Processing and Interpretation
Computer Vision
Computational Linguistics

SELECT PUBLICATIONS

Nathan Thom, Andrew DeBolt, Lyssie Brown and Emily M. Hand, "DoppelVer: A Benchmark for Face Verification" in 18th International Symposium on Visual Computing (ISVC)

Nathan Thom, Jay Thom, Batyr Charyyev, Emily M. Hand, and Shamik Sengupta "FlexHash: Hybrid Locality Sensitive Hashing for IoT Device Identification" in 2024 IEEE 21st Consumer Communications & Networking Conference (CCNC)