NEJAT CAN

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OBJECTIVE

Software engineer specializing in constrained 3D reconstruction, seeking machine learning roles in computer vision.

SKILLS

Languages	Python, C/C++, CUDA, MATLAB, bash, Swift
Technologies	PyTorch, TensorFlow, Nerfstudio, Git, Google Cloud, AWS
Communication	Competed in World Debate Championships; Native speaker of English

EXPERIENCE

IMETALX Space Systems Jun 2025 – present
Computer Vision/Machine Learning Engineer *San Francisco, CA*

- Led algorithmic direction of a zero-to-one product for automated 3D reconstruction of satellites from 2D images, transforming a failing prototype into a deployed system within 2 months and **secured a DoD contract**.
- Adapted cutting-edge 3D vision methods (Gaussian Splatting, NeRFs, SDFs, and pose-free transformer-based architectures such as VGGT and π^3) to extreme space-imaging conditions with sparse views, few features, and unconventional camera paths.
- Served as principal contributor owning >50% of the product's technical success, **with autonomy to define and execute the entire product direction** in a startup environment.

University of Southern California Aug 2022 – May 2025
Ph.D. Research Assistant *Los Angeles, CA*

- Developed a self-supervised VarNet for real-time 3D MRI reconstruction leveraging Noise2noise to enable robust training **in absence of ground-truth**. Implemented iterative physics-informed optimization with learnable refinement modules. Achieved high-accuracy end-to-end image reconstruction directly from undersampled k-space data.
- Designed a physics-informed constrained image reconstruction algorithm for dynamic MRI, achieving significant de-blurring of fine structures by optimizing a **spatial-temporal regularized** cost function using nonlinear conjugate gradient descent. Leveraged singular value decomposition for computational efficiency via **low-rank approximation**.

Massachusetts Institute of Technology May 2021 – Nov 2021
Research Intern *Boston, MA*

- Designed a self-supervised 4D CNN for low-latency diffusion tensor imaging, incorporating **residual learning** for stable training. Applied **physics-based constraints** to improve model accuracy. Maximized model performance by performing ablation studies and **optimized hyperparameters** via parameter sweeps. Outperformed the non-DL-based method by improving the reconstruction time by a **factor of 17.5x**, while maintaining high-fidelity with an **SSIM of 0.96**. Developed in **TensorFlow**.

EDUCATION

M.S. in Electrical Engineering, University of Southern California Aug 2022 – May 2025

- Dropped out of Ph.D. in Electrical Engineering.
- *Research Areas*: 3D Reconstruction, Machine Learning, Image Processing
- *Courses*: Optimization, Inverse Problems, Machine Learning, Digital Signal Processing

B.S. in Biomedical Engineering, University of Rochester Aug 2018 - May 2022

- *Honors and Scholarships*: Rosenberger Prize, International Baccalaureate Scholarship, Dean's List