Riley Peterlinz

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WORK EXPERIENCE

Berkeley AI Research | *Research Associate* — April 2023 - Present

- Working with Prof. Angjoo Kanazawa and Prof. Alyosha Efros on projects in quantitative 3D.
- NeRF Studio Contributor

Berkeley Lab | *Research Engineer* — September 2021 - May 2023

- Quantum Algorithms for High Energy Physics Lab
- Worked closely with physicists to build internal optimization tools for machine-learning based physics deployed across multiple projects

PROJECTS

3D Fluid Simulation — Computer Graphics

- Implemented FLIP (Fluid in Particle) fluid simulation in python
- Exported particle system to mesh using OpenVDB
- Rendering in Blender's EEVEE rendering engine

Neural Style Transfer — Computer Vision

- Implemented Neural Style Transfer Paper in Pytorch and compared results with Image Quilting, an older method for texture synthesis
- Python, PyTorch, OpenCV, Google Colab

Facial Keypoint Detection with Neural Networks — Computer Vision

- Implemented RESNET and UNET architectures for facial recognition in PyTorch
- Trained on the 300-W iBug facial landmark dataset and tested on the same dataset without labels alongside my own pictures
- UNET gave best results with a mean error of 8.97px per facial landmark
- Python, PyTorch, Skimage, Plotly, Google Colab

Parameter Optimization for Variational Quantum Eigensolver — Berkeley Lab

- Built tools to discover the global minima of various quantum cost functions
- Used for research in quantum computing with 10,000+ lines of code
- Python, Qiskit, Numpy, Sympy, PyTorch

EDUCATION

UC Berkeley — 2023

B.A. Computer Science and Physics

Relevant Coursework: Algorithms, Computer Vision and Computational Photography, Computer Graphics, Machine Learning, Discrete Mathematics and Probability Theory, Multivariable Calculus, Linear Algebra

TEACHING

CS 198-120: Full-Stack Quantum Computing | *Instructor* — UC Berkeley

- Developed lectures and problem sets for a course on quantum computing
- 30+ students with lectures 2x per week for weekly problem sets and a final project

CS 170: Algorithms | *Reader* — UC Berkeley

- Hosted office hours and graded assignments for 500+ students every week

SKILLS

Languages & Frameworks | Python, Java, C++, Git, Jupyter

Tools | LaTeX, Qiskit, Processing, Numpy, OpenCV, PyTorch, Plotly, Matplotlib, Pandas

Github CardiacMangoes | Linkedin rpeterlinz