Valeriy Rotan

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Education

University of California, Berkeley - BS Electrical Engineering and Computer Sciences
Graduating December 2023, GPA 4.00

Experience

Mohamed bin Zayed University of Artificial Intelligence - Research Assistant, Metaverse Lab
August 2022 - Current

- Solving the problem of neural radiance field scalability by developing new algorithms to dynamical build out and train radiance fields on-the-fly
- Conducting research at a graduate AI research-focused university advised by Dr. Hao Li

Pinscreen - Research Intern
February 2022 - September 2022

- Achieved significant improvements in real-life 3D avatar visual reconstruction quality by adapting the pipeline to work with multiple unposed input images of human faces
- Worked in-depth with 2D and 3D StyleGAN-based generative adversarial networks for novel view synthesis

VMware Inc - Artificial Intelligence Machine Learning Research Intern
May 2021 - August 2021

- Built a 3D human avatar generation system to generate recognizable avatars from a single input image for internal use by the entire company (30k+ people)
- Placed second of over 100 teams at the intern hackathon by developed a tool to improve survey quality using large language models to predict response rates to proposed survey questions

Peritus AI Inc - Software Engineer Intern
August 2020 - May 2021

- Improved user experience by 10% by developing a query-specific document summarization system using large language models such as BERT and classical machine learning techniques including word2vec and TFIDF
- Increased recommendation engine relative performance by up to 15% with neural entity recognition and linking

Projects

CS 194-126: Deep Learning for Computer Vision - Machine Learning at Berkeley

- Designed content on convolutional neural networks and 3D computer vision for a 100-student course publicly offered to all UC Berkeley students
- Course content is publicly available at https://ml.berkeley.edu/decal/modern-cv

Intro to Machine Learning Instructor - Machine Learning at Berkeley

- Teaching a class on deep learning to 20 students, spanning linear algebra, probability, classical machine learning, modern deep learning, computer vision, natural language modeling, and reinforcement learning
- Course content is publicly available at https://ml.berkeley.edu/nmep

Energy Consumption Estimation for Subtractive Machining - Autodesk through Machine Learning at Berkeley
February 2022 - May 2022

- Predicted energy consumption with >98% accuracy on the provided dataset
- Used classical machine learning techniques to design an interpretable model in a low-data problem

Render Engine

- Implemented a 3D ray tracing render engine with Phong shading model in C

Technical Skills

Python • C/C++ • Java • JavaScript • PyTorch • CUDA • Docker • Kubernetes • Git/GitHub • OpenCV • NumPy
Machine Learning • Computer Graphics • Deep Learning • Computer Vision • Data Structures • FFMPEG