Volodymyr Vakhniuk

+1 (217) 974-6084 | vladimir18045@gmail.com | https://www.linkedin.com/in/volodymyr-vakhniuk

Education

University of Illinois Urbana-Champaign (UIUC) August 2022 - December 2023
Masters of Science in Computer Science GPA: 3.68

University of Illinois, Chicago (UIC) August 2018 - May 2022
Bachelor of Science in Computer Science GPA: 3.55

Experience

Adapting Diffusion Models for Few-shot Image Synthesis
- Successfully trained a Diffusion Model on the FashionMNIST dataset.
- Integrated the Diffusion Model with a Few-shot classifier.

Maximizing Editability and Reconstructability of GAN Inversions
- Implemented the SAM (Spatially-Adaptive Multilayer) Inversion Pipeline, proposed in “Spatially-Adaptive Multilayer Selection for GAN Inversion and Editing.”

STAC: Leveraging Spatio-Temporal Data Associations for Efficient Cross-Camera Streaming and Analytics
- Designed and implemented ReID (Re-Identification) Algorithm based on OSNet Architecture. The algorithm displayed superior performance in identifying people across multiple cameras.
- Successfully implemented and integrated the Pipeline proposed in CrossRoI paper which helped to compress camera data drastically.

Survey on Visual Reasoning Methods
- Co-authored an extensive survey on Visual Reasoning Methods, significantly contributing to all sections of the survey.

Portable game console based on Raspberry Pi, EXPO 2020
- Innovated the classic Pacman game by developing a 3D version using Python and OpenGL, elevating the gaming experience.
- Engineered and assembled the game console using advanced hardware components, resulting in a compact and high-performance device.

National Park Builder Application, CS 440 UIC
- Transformed gameplay experience by integrating advanced 3D Computer Graphics using JavaScript and WebGL.
- Conceptualized and implemented a Random Map Generator leveraging the Perlin Noise Algorithm in JavaScript, significantly enhancing game dynamics.

Linear Transformation Visualizer, 2021 Summer of Math Exposition (SoME1)
- Contributed to the visualizer project by designing and deploying a sophisticated Animation Engine using JavaScript and p5.js.
- Authored comprehensive Linear Algebra tutorials to support and enrich the educational aspect of the project.

Skills

Machine Learning, Data Science, Data Mining, Computer Vision, Natural Language Processing, Deep Learning, Deep Generative Models, Visual Reasoning, MLOps, Probability Theory, Mathematical Statistics, Stochastic Processes, Mathematical Analysis, Linear Algebra, Information Theory, Optimization Theory, Numerical Analysis, Algorithms & Data Structures, Computability Theory, Object-Oriented Programming and Software Design Patterns, Python, NumPy, PyTorch, Tensorflow, Keras, Matplotlib, Pandas, Scikit-learn, SQL, 3D Computer Graphics, GPGPU Computing, C/C++, CMake, Javascript, OpenGL, WebGL, p5, CUDA, OpenCL.

Languages

English, Ukrainian, Russian, French