Doğa Yılmaz

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EDUCATION

2021 – 2023 **M.Sc. in Artificial Intelligence – Özyeğin University**

- Faculty of Engineering, Department of Computer Science – Awarded Fellowship Support – GPA: 3.81/4.00
- Adviser: Assist. Prof. Furkan Kıraç
- Research Interests: Computer Vision, Computer Graphics, 3D Reconstruction, Inverse Rendering
- Thesis: Illumination-Guided Inverse Rendering Benchmark: Learning Real Objects with Few Cameras

2016 – 2020 **B.Sc. in Computer Science — Özyeğin University**

- Faculty of Engineering, Department of Computer Science
- Adviser: Assist. Prof. Furkan Kıraç
- Thesis: Deep Residual Autoencoder for Real Image Denoising

EXPERIENCE

08/2022 – Present **R&D Software Engineer**

Fishency Innovation – Stavanger, Norway

- Currently working on signed distance function based inverse rendering methods for 3D fish reconstruction.
- Developed visualization tools to validate and debug the machine learning pipeline.

02/2021 – 10/2023 **Graduate Research & Teaching Assistant**

Özyeğin University Vision and Graphics Laboratory (VGL) – Istanbul, Turkey

- Working on novel view synthesis and 3D reconstruction.
- Courses Assisted: Advanced C++ Programming, Programming Paradigms, Data Structures and Algorithms, Object-Oriented Programming, Agile Software Development
- Academic Service: Reviewer, RCV Workshop ICCV; Reviewer, ReScience C Journal

07/2019 – 02/2021 **Undergraduate Research Assistant**

Özyeğin University Vision and Graphics Laboratory (VGL) – Istanbul, Turkey

- Developed and trained an autoencoder for real-world image denoising problem using PyTorch.
- Worked on dataset generation using Blender3D.

PUBLICATIONS

2023 Kınlı, F., Yılmaz, D., Özcan, B., and Kıraç, F., DeNIM: Deterministic Neural Illuminant Mapping for Efficient Auto-White Balance Correction, IEEE ICCV Workshop on Resource Efficient Deep Learning for Computer Vision, 2023.

2023 Yılmaz, D., Kıraç, F., Illumination-guided inverse rendering benchmark: Learning real objects with few cameras. Computers & Graphics, 115, 107-121.

2023 Kınlı, F., Yılmaz, D., Özcan, B., and Kıraç, F., Modeling the Lighting in Scenes as Style for Auto White-Balance Correction, IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2023.

2022 Yılmaz, D., Kınlı, F., Özcan, B., and Kıraç, F., "[Re] Lifting 2D StyleGAN for 3D-Aware Face Generation", ReScience C, 8(2), 2022. Presented at NeurIPS 2022 Journal Track.

PROJECTS

02/2022 – 06/2022 Ray Tracing Parallelization With OpenMP

- Analysed a ray tracing implementation in C++ using VTune profiler and detected hotspots.
- Parallelized the sequential ray tracing implementation using OpenMP.
- Benchmarked the sequential code with parallelised code in terms of effective cpu utilization, elapsed time and memory/cache utilization by using VTune and Valgrind profilers, observed up to 300 times performance improvement.

09/2021 – 01/2022 Image Classification Using CNN-LSTM Hybrid Model With Skip Connections

- Worked on a neural network architecture in PyTorch for single-label image classification that combines CNN and LSTM blocks.
- Achieved better performance in terms of convergence speed by combining characteristics of both models.

09/2021 – 01/2022 Turkish Lira Classification Using AWS Rekognition

- Developed a system for visually impaired people which recognises a given banknote.
- The classification of the scanned banknote is processed using AWS Rekognition custom label service.

04/2019 – 06/2019 Very Simple OS

- Developed a minimal OS which runs and schedules given programs.
- The OS runs on the Very Simple CPU developed in Özyeğin University by Prof. H. Fatih Uğurdağ.

AWARDS and ACHIEVEMENTS

10/2020 Ranked 1st in Turkey and 172nd globally out of 2155 teams in IEEEXtreme[1] 14 programming competition.

SKILLS

Languages Fluent English, beginner level German and native Turkish speaker.

Programming Python, C++ and Java

Technologies PyTorch/LibTorch, Mitsuba 3, OpenCV, OpenMP, AWS, Docker, Unity3D, Blender3D

EXTRA-CURRICULAR ACTIVITIES

2020 Organized Global Game Jam (GGJ)[2] 2020 at Özyeğin University.

2019 Coordinated the activities of IEEE Özyeğin University Student Branch Computer Society in 2019 academic year.

[1] IEEEXtreme is a global challenge in which teams compete in a 24-hour time span against each other to solve a set of programming problems.

[2] Global Game Jam® (GGJ) is the world's largest game jam (game creation) event taking place around the world.