Doğa Yılmaz

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EXPERIENCE

11/2023 – Present — **Research Intern**

UCL Computational Light Laboratory – London, UK

- Conducted research in perceptual graphics and vision under the guidance of Dr. Kaan Akşit.
- Contributed to the development of "Odak," an open-source scientific computing framework for optical sciences, computer graphics, and visual perception.

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

Fishency Innovation – Stavanger, Norway

- Key contributor to the development of an inverse rendering-based state-of-the-art fish biomass estimation project, leading to a peer-reviewed and published algorithm, and a highly accurate system with over 90% accuracy in biomass estimation. Employed software tools, including Mitsuba 3, PyTorch, and Python.
- Deployed and scaled the underwater fish biomass estimation software to the existing hybrid infrastructure.
- Developed 2D/3D visualization tools to validate and debug several machine learning pipelines.

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

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

- Actively participated in multiple research projects with a focus on inverse rendering and auto-white balance correction, resulting in several valuable publications.
- Contributed as a teaching assistant across a range of university courses, offering academic support and guidance to students.
- 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

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

SKILLS

Languages — English: Advanced (TOEFL: 99/120), German: Beginner, Turkish: Native

Programming — Python, Modern C++(17/20), Java

Technologies — PyTorch/LibTorch, Mitsuba 3, Kornia, OpenCV, OpenMP, AWS(S3, EC2, Rekognition), Docker, 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 — **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.

AWARDS AND ACHIEVEMENTS

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

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[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.