GÜLÇİN BAYKAL CAN

gulcinbaykal95@gmail.com · baykalg@itu.edu.tr · · ·

EDUCATION

Ph.D. Istanbul Technical University Istanbul, Turkey 2020 ▸ Now

Computer Engineering Department, GPA: 4.00/4.00

Thesis: Representation Learning for Generative Tasks

Advisor: Prof. Dr. Gözde Ünal

Courses: Deep Reinforcement Learning, Data Mining, Causality, 3D Vision

M.Sc. Istanbul Technical University Istanbul, Turkey 2018 ▸ 2020

Computer Engineering Department, GPA: 3.94/4.00

Thesis: DeshuffleGAN: Self-Supervised Learning for Generative Adversarial Networks

Advisor: Prof. Dr. Gözde Ünal

Courses: Deep Learning, Machine Learning, Artificial Intelligence, Graph Theory and Algorithms, Engineering Mathematics

B.Sc. Istanbul Technical University Istanbul, Turkey 2014 ▸ 2018

Computer Engineering Department, GPA: 3.59/4.00, *Ranked #2 in graduation.*

Thesis: Turkish Lira Banknotes Classification for Visually Impaired People with Deep Learning

Advisor: Prof. Dr. Gözde Ünal

Courses: Numerical Methods in CE, Probability and Statistics, Linear Algebra, Discrete Mathematics, Computer Vision, Learning from Data, Artificial Intelligence

WORK EXPERIENCE

Research Assistant · **ITU Vision Lab** · **ITU** 2020 ▸ Now

Work as a **Google DeepMind Scholar** in ITU Vision Lab. Volunteer Teaching Assistant of Deep Learning course of ITU Computer Engineering Graduate Program.

Teaching Assistant · **ITU Computer Engineering Department** · **ITU** 2019 ▸ 2020

Teaching Assistant of Introduction to Information Systems, System Programming, Numerical Methods for CE, Functional Programming

Research Assistant · **ITU Vision Lab** · **ITU** 2018 ▸ 2019

Work as a **Turkcell Scholar** in ITU Vision Lab.

PUBLICATIONS

Journal Publications

· **G. Baykal**, F. Ozcelik and G. Unal, "Exploring DeshuffleGANs in Self-Supervised Generative Adversarial Network," Pattern Recognition, Volume 122, 2022, 108244, ISSN 0031-3203, https://doi.org/10.1016/j.patcog.2021.108244.

Conference Proceedings

· (Accepted) **G. Baykal***, H. F. Karagoz*, T. Binhuraib, and G. Unal, "ProtoDiffusion: Classifier-Free Diffusion Guidance with Prototype Learning," *Asian Conference on Machine Learning*, Istanbul, Turkey, 2023.

· H. F. Karagoz, **G. Baykal**, I. A. Eksi, and G. Unal, "Textile Pattern Generation Using Diffusion Models," *International Textile and Fashion Congress ITFC 2023 Proceeding Book*, Istanbul, Turkey, 2023.

· F. Oncel, M. Aygün, **G. Baykal**, and G. Unal, "UGQE: Uncertainty Guided Query Expansion," *Pattern Recognition and Artificial Intelligence: Third International Conference, ICPRAI 2022*, Paris, France, 2022, pp. 109 – 120, doi.org/10.1007/978-3-031-09037-0_10

· **G. Baykal** and G. Unal, "Deshufflegan: A Self-Supervised Gan to Improve Structure Learning," *2020 IEEE International Conference on Image Processing (ICIP)*, Abu Dhabi, United Arab Emirates, 2020, pp. 708-712, doi: 10.1109/ICIP40778.2020.9190774.

· **G. Baykal**, U. Demir, I. Shyti and G. Unal, "Turkish lira banknotes classification using deep convolutional neural networks," *2018 26th Signal Processing and Communications Applications Conference (SIU)*, Izmir, 2018, pp. 1-4, doi: 10.1109/SIU.2018.8404606.

Skills

</> **Programming Languages:** Python · C/C++ · Haskell · SQL · HTML · CSS

Libraries: PyTorch · OpenCV · Matplotlib · NumPy · Pandas · Plotly · Scikit-learn · SciPy

Languages: Turkish (*Native*) · English (*Advanced*) · Japanese (*Beginner*) · Korean (*Beginner*)

Honors and Awards

Granted by **TUBITAK 2214-A International Research Fellowship Program for PhD Students**. 2023

Selected to attend **Mediterannean Machine Learning Summer School 2023**. 2023

Granted by **ITU-Google DeepMind Scholarship Program**. 2020 ▸ Now

Granted by **Turkcell-ITU Researcher Funding Program**. 2018 ▸ 2019

Graduated with **Honors in** 2^{nd} place from ITU Computer Engineering Department. 2018

Istanbul Technical University **Undergraduate Honor Scholarship**. 2014 ▸ 2018

Granted by **Turkish Education Foundation (TEV) High Merit Scholarship**. 2014 ▸ 2018

Outreach and Mentoring

Kendin İçin Kodla 2019 ▸ Now

Content Creator · Workshop Instructor

Kendin İçin Kodla aims to encourage high school-level female students in Turkey to pursue higher education and careers in the field of IT and CS. We focus on teaching problem solving, design, and implementation skills rather than just coding to students in our voluntary project. Through free, two-day workshops in diverse IT fields, we aim to help students explore their abilities and interests.

ITU Vision Lab 2018 ▸ Now

Supervisor

Supervised various undergraduate projects including:

· Pose guided image generation using GANs · Signature detection and verification using Deep Learning · Image enhancement using Deep Learning · Textile pattern generation using Stable Diffusion

Professional Activities

Reviewer for Asian Conference on Machine Learning (ACML) 2023

Reviewer for Conference on Signal Processing and Communications Applications (SIU) 2022 ▸ 2023

References

Available upon request.