

Canberk Baykal

AI RESEARCHER · CAMBRIDGE, UNITED KINGDOM

☎ (+44) 7467-765450 | ✉ canberk.baykal1@gmail.com | 🏠 johnberg1.github.io | 👤 johnberg1 | 🌐 canberkbaykal

Education

University of Cambridge

PH.D. IN COMPUTER SCIENCE AND ENGINEERING

Cambridge, UK

Oct 2023 –

- **Research Areas:** Machine Learning, Computer Vision, Natural Language Processing

Koç University

MASTER OF SCIENCE IN COMPUTER SCIENCE AND ENGINEERING

Istanbul, TR

Sep 2020 - June 2022

- **CGPA:** 4.00 / 4.00
- **Research Areas:** Machine Learning, Computer Vision, Natural Language Processing
- **Relevant Coursework:** Deep Learning, Computer Vision with Deep Learning, Natural Language Processing, Deep Unsupervised Learning, Advances in Deep Learning

Bilkent University

BACHELOR OF SCIENCE IN ELECTRICAL AND ELECTRONICS ENGINEERING

Ankara, TR

Sep 2016 - June 2020

- **CGPA:** 3.70 / 4.00
- **Relevant Coursework:** Introduction to Machine Learning, Artificial Intelligence, Neural Networks

Research & Work Experience

Cambridge Open Reality And Visual AI Laboratory

GRADUATE AI RESEARCHER, ADVISED BY PROF. CENGİZ ÖZTIRELİ

Cambridge, UK

Oct. 2023 –

- Conduct research on 3D Computer Vision problems including 3D capture and reconstruction.

KUIS AI Center

GRADUATE AI RESEARCHER, CO-ADVISED BY PROF. DENİZ YURET & PROF. AYKUT ERDEM

Istanbul, TR

Sep. 2020 –

- Work at the intersection of Computer Vision and Natural Language Processing.
- Conduct research specifically on language guided image generation and manipulation.
- Implement neural networks in Python using PyTorch and Julia using Knet.

ASELSAN

SUMMER INTERN

Ankara, TR

July 2019 - Aug. 2019

- Study and implement VHDL design and verification techniques and apply these on small-scaled projects.

INFINIA Mühendislik

SUMMER INTERN

Ankara, TR

June 2018 - Aug. 2018

- Work on Raspberry Pi 3 Model B+ on a local web server that controls LEDs on a Model Automation System.
- Implement a simple interface to control LEDs using ESP8266 Wi-Fi module.

Publications

CLIP-Guided StyleGAN Inversion for Text-Driven Real Image Editing [ACM TOG 2023]

- A model that manipulates images according to a text prompt, using a multi-modal encoder which finds semantically meaningful manipulation directions in the latent space of a Generative Adversarial Network. Light-weight CLIP-conditioned adapters are used to turn pre-trained conditional GAN inversion networks into CLIP-conditioned networks.

HyperGAN-CLIP: A Unified Framework for Domain Adaptation, Image Synthesis and Manipulation [SIGGRAPH Asia 2024]

- A versatile framework that enhances the capabilities of a pre-trained StyleGAN for various tasks, including domain adaptation, reference-guided image synthesis, and text-guided image manipulation even when only a small number of training sample are available.

Undergraduate Projects

Image Captioning

- A deep learning model that takes images as input and outputs captions for that image, using Convolutional Neural Networks and LSTM.

Word++

- An AI program that finds alternate clues for NY Times crossword puzzle answers.

Re-Contact

- An android application that allows its users to add each other and exchange contact information via Near-Field Communication (NFC) technology.

Music Genre Predictor

- A machine-learning project that uses features from a song to predict its genre using Artificial and Convolutional Neural Networks.

Skills

Programming Languages	Python, Java, Julia, C++, VHDL
Frameworks	PyTorch, Keras, Tensorflow, Knet (Julia)
Developer Tools	Git, PyCharm, Spyder, Jupyter, IntelliJ, VSCode, MATLAB
Languages	Turkish (C2), English (TOEFL iBT: 110, C2), German (A2), Spanish (A1)

Honors & Awards

2023–2026 **Cambridge Trust & Computer Science Premium Scholarship**

2022–2025 **TensorFlow Developer Certificate**

2020– **AI Fellowship, KUIS AI Center**

2020-2022 **TÜBİTAK National M.Sc. Scholarship Program**

2019 **2nd place in IEEEExtreme Turkey Camp Contest**

2019 **19th place in Turkish Programming Contest (regional elimination round of ICPC)**

2019 **ALES (Selection Exam for Academic Personnel and Graduate Studies), Score: 96, Rank: 230 out of 122.927**

2016-2020 **Bilkent University Comprehensive Scholarship. Covers 100% of tuition and monthly stipends during the study.**

2016-2020 **Scholarship of the Turkish Prime Ministry. Monthly stipends for outstanding performance in the Nationwide University Entrance Exam LYS.**

2016 **Ranked 38th in the Nationwide University Entrance Exam LYS and 51st in YGS among 2 million students in Turkey**

Teaching Experience

Koç University

TEACHING ASSISTANT

- COMP106 - Discrete Mathematics for Computer Science and Engineering (Fall 2020, Fall 2021)
- COMP547 - Deep Unsupervised Learning (Spring 2021, Spring 2022)
- COMP202 - Data Structures & Algorithms (Fall 2022)
- COMP527 - Computational Imaging (Spring 2023)
- Python Crash Course & Generative Adversarial Networks at KUIS AI Center Summer Camp

Istanbul, TR

Sep. 2020 –

Extracurricular Activity

Bilkent Cycling Society

GENERAL SECRETARY

Bilkent IEEE Student Branch

ACTIVE MEMBER

Ankara, TR

2018-2019

Ankara, TR

2017