

# Berkay Barlas

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## Education

### Koc University

Istanbul, Turkey

B.S. COMPUTER ENGINEERING

Jan. 2018 - Exp. May. 2021

- **Related Coursework:** Algorithms & Complexity, Computer Networks, Parallel Programming, Modern Cryptography

### Koc University

Istanbul, Turkey

B.S. ELECTRONICS ENGINEERING DOUBLE MAJOR

Oct. 2015 - Exp. May. 2021

- **GPA 3.8 / 4.0** | Received 100% scholarship which is given to **top 300(0.01%)** among 2 million students.

### Technical University of Munich (TUM)

Munich, Germany

EXCHANGE STUDENT WITH ERASMUS+ FULL GRANT

Apr. 2020 - Sept. 2020

- **Related Coursework:** Internet-scale Distributed Systems, Machine Learning for Computer Vision, Blockchain-based Systems

### Nanyang Technological University (NTU)

Singapore

EXCHANGE STUDENT WITH FULL-SCHOLARSHIP

Aug. 2019 - Dec. 2019

- **Related Coursework:** Artificial Intelligence and Data Mining

## Research & Teaching Experience

### Network and Distributed Systems Laboratory, Koc University

ADVISOR: PROF. DR. ÖZNUR ÖZKASAP

Jan. 2019 - Jun. 2019

- Worked on the Skip Graph project which is used for block-chain and distributed system simulations.
- Developed Java implementations and test cases for node search and availability algorithms.
- Added automated tests that check bandwidth availability and system capacity

### Stanford University CS Bridge Program

SECTION LEADER | LECTURER: PROF. NICK McKEOWN

Summer'17, Summer'18

- Helped 50+ high school students with their first experience in programming each year. Conducted laboratory sessions.

### Koc University

TEACHING ASSISTANT | INTRODUCTION TO PROGRAMMING

Fall'17, Spring'18, Fall'18

- Prepared and graded assignments, conducted problem solving sessions for Introduction to Programming course.

### Koc University Arcelik Research Center for Creative Industries

ADVISOR: ASST.PROF. DR. M. CENGİZ ONBASLI

Oct. 2017 - May. 2018

- Built and deployed overall Internet of Things(IoT) project with Raspberry pi, camera, temperature and weight sensors.
- Developed native mobile application for Android.
- Used machine learning algorithm for food recognition and several AWS stack including Recognition, S3, DynamoDB and Lambda.
- Worked on a research about applications of wearable technologies in gamification and prototyped a hand controller with Arduino and 3D Printing.

## Leadership & Volunteer Experience

### Stanford University Hasso Plattner Institute of Design (d.school)

Stanford University & Remote

UNIVERSITY INNOVATION FELLOW

Oct. 2019 - Present

- Concluded a 7 week-long design thinking, innovation, and entrepreneurship online education.
- Carried out campus-wide projects to advocate for lasting institutional changes to increase sustainability and creativity.

### Global Learning and Leadership Program

Istanbul, Turkey

COFOUNDER OF KOC UNIVERSITY MAKERSPACE LAB

Sept. 2016 - Present

- Funded by engineering faculty to design the space and chose the required tools after one year of pivot project.
- Coordinated team members and arranged workshops about computer science, creative skills, and social innovation.
- In Spring 2019, 40% of all senior engineering projects developed in fully student driven Makerspace.

### AIIESEC

Cairo, Egypt

GLOBAL VOLUNTEER IN EGYPT

Summer 2016

- Was a member of an international team of 30 people which was responsible from building a school from throw-out materials such as plastic bottles, car tires in a poor island in Nile, Egypt.

## Work & Internship Experience

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### Vagon.io

FULL-STACK SOFTWARE DEVELOPER

Remote

Mar. 2020 - Present

- Working on Web and back-end applications using React, Ruby on Rails, PostgreSQL, AWS, Docker.
- Built a module that installs software on machine images and distributes them to 8 cloud regions.
- Improved live streaming service performance by 30% using Websocket connection and browser decoder APIs.
- Increased fraud detection, prevention methods and changed payment systems. Monthly fraud cases decreased by 80%.

### Mozilla / Firefox Devtools

OPEN SOURCE CONTRIBUTOR

Remote

Jan.2020 - Mar. 2020

- Worked on Firefox projects, mainly on Firefox Devtools. Solved and reported issues on Github and Bugzilla(Phabricator).
- Created previewer that shows the visual content of website in timeline for performance recording tool Firefox Profiler.
- Reworked Firefox reader mode design and integrated reader specific buttons to work with browser settings.

### Zeplin.io

SOFTWARE DEVELOPER INTERN

San Francisco,CA & Istanbul

Jun. 2019 - Aug. 2019

- Worked on React Web and Electron Windows applications and developed components that are used across all application.
- Migrated Profile Pages(Account settings, Billing, Subscriptions) to React JS from vanilla Javascript, HTML, CSS.
- Reduced code redundancy around 30% in Profile Pages and increased loading speed around 10%.

### Alibaba Group / Trendyol.com

SOFTWARE DEVELOPER INTERN

Istanbul, Turkey

Jul. 2018 - Dec. 2018

- Developed web services for seller interface of e-commerce application using Java Spring Boot, REST API, RabbitMQ.
- Implemented new microservice features to Seller Portal that are used for adding and tracking products in marketplace.

## Advanced Course Projects

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### Senior Design Project | fundeus.xyz

EYE DISEASE CLASSIFICATION SYSTEM

Oct. 2020 - Jan. 2021

- Implemented Machine Learning algorithms that can classify cataract, glaucoma, and diabetic retinopathy from fundus images.
- Designed the overall scalable cloud system and prepared front-end, back-end applications of the project using React, Ruby, and AWS.
- Selected as one of the best projects of the year and awarded with the outstanding grade of A+ for our work.

### Internet-scale Distributed Systems

REVIEW PAPER: YCSB VS BIGBENCH

Apr. 2020 - Aug. 2020

- Prepared and presented a paper that compares Yahoo! Cloud Serving Benchmark(YCSB) and BigBench Benchmark tools.
- Read and discussed a total of 30 papers about recent Distributed Systems Technologies during the semester.

### Parallel Programming Course Project

CARDIAC ELECTROPHYSIOLOGY SIMULATOR

Jan. 2019 - Jun. 2019

- Implemented 3 versions of a serial cardiac electrophysiology simulator using MPI, OpenMP, and Nvidia CUDA.
- Optimized multi-core GPU performances of MPI, OpenMP, and Nvidia CUDA versions and prepared performance comparison report on different input scales.

### Software Engineering Course Project

MULTITHREADED GAME WITH NETWORK

Oct. 2018 - Jan. 2019

- Developed an online game based on Ultimate Monopoly board game with a team of 5 people and acted as a team leader.
- Designed the network and thread related parts of the project and applied GoF design patterns.
- Selected as the best project among 20 other projects by the professor and TAs.

## Honors & Awards

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17'-19' **Vehbi Koc Scholar** , Awarded in Fall'17, Spring'18, Fall'18 and Spring'19 for high academic performance

2019 **Pixery Hackathon'19 Best Project Award**, Ranked **1st** among preselected 12 teams

2019 **Ciceksepeti Hackathon'19 Best Project Award**, Ranked **1st** among preselected 30 teams

2018 **Zeplin Hackathon Special Jury Award**, Awarded as most enthusiastic team to learn new concepts and tools

2015 **Ranked 273th among more than 2 million Students**, Turkish University Attainment Exam

2011 **Ranked 1st among more than 1 million Students**, Turkish High School Attainment Exam