Furkan K. **Yıldırım**

COMPUTER SCIENCE & INDUSTRIAL ENGINEERING · MASTER OF SCIENCE STUDENT

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Education

Sabancı University
M.Sc. IN INDUSTRIAL ENGINEERING - FULL SCHOLARSHIP
İstanbul, Turkey
Feb. 2024 - Expected: Jan. 2026
- **Featured Courses:** Facility Design and Analysis, Cloud Computing, Operations Research and Data Mining

Sabancı University
B.S. IN COMPUTER SCIENCE & INDUSTRIAL ENGINEERING (DROPPED OUT DUE TO STARTING M.SC.) - BUSINESS ANALYTICS
İstanbul, Turkey
Sep. 2019 - Jan. 2024
- **Computer Science Featured Courses:** Data Structures & Algorithms, Software Engineering, Programming Languages, Operating Systems, Database Systems, Network Systems, Mobile Application Development, Data Visualization & Analysis, Machine Learning, Logic & Digital System Design, Cybersecurity Practices and Applications.
- **Industrial Engineering Featured Courses:** Operation Research, Business Strategy, Simulations, Decision Economics, Information Systems, Logistic System Planing & Design, Decision Making Under Uncertainty, Management Information Systems.

Skills

Front-end	React, React Native, Flutter, HTML5, CSS
Back-end	FastAPI, Flask, ASP.NET, REST API
Programming	Python, C++, C#, R, JavaScript, Dart, SQL, Verilog, Rockwell Arena
Other	Discrete Event Simulation, Vehicle Routing Problems, Software Architecture & Design, Mobile Application Development, Web Development, Agile Software Development, Data Analysis, CI & CD

Professional Experience

Flio.ai
FOUNDER
Istanbul, Turkey
Aug. 2023 - Present
- Engineer an end-to-end Order Management System integrated with a Vehicle Routing Optimization Engine, leveraging mathematical modeling and advanced heuristic algorithms to address complex logistical constraints and enhance operational efficiency in supply chain networks.
- Collaborate with Sabancı University and its entrepreneurship program SUCool (Start-Up Company League) during the development of the system, which secured investment through TÜBİTAK 1512 BİGG and reached a $1M valuation.
- Develop the software using Python's FastAPI for the backend and JavaScript frameworks React and React Native for web and mobile frontends. Implemented CI/CD pipelines with Docker, deploying scalable microservices architecture on both Google Cloud and AWS platforms.

Getir
ALGORITHM DEVELOPER
Istanbul, Turkey
Nov. 2022 - Nov. 2023
- Took role in the improvement and development of micro-services that receive 1.2M orders per day by using Python.
- Participated in the development of business logic algorithms to deliver orders in the most efficient way in GetirMarket domain.
- Maintained in the development of Discrete Event Simulation to optimizing test and run-time performances of the algorithms by using Python, FastAPI, Numpy and Pandas in GetirMarket domain.
- Worked on visualizing and analyzing data results from VROOM, OSRM and New Relic on the Getir Market platform using Python.

ALGORITHM DEVELOPER INTERN
Apr. 2022 - Nov. 2022
- Worked on optimization test and run-time performances of OSRM and VROOM results with Discrete Event Simulation on Getir Market platform using Python libraries FastAPI, Numpy and Pandas.
- Developed unit tests, developed integration tests and refactored code-bases for micro-services of the Getir Market platform using Python.

Sabancı University
LEARNING & TEACHING ASSISTANT
Istanbul, Turkey
Oct. 2021 - Jun. 2022
- Assisted Instructor Gülşen Demiröz on Data Structures Course, gave homework, graded, and helped students on assignments, also held weekly office hours.
- Assisted students with their Python learning through weekly recitation sessions in the Computational Approaching to Problem Solving Course.
- Under the supervision of Prof. İnanç Arın, extracted Turkish texts from PDF images using Python and certain API's with Sabancı University Center of Excellence in Data Analytic.

CRS Software
SOFTWARE ENGINEER INTERN
Istanbul, Turkey
Jan. 2022 - Feb. 2022
- Created and developed an e-commerce platform with .NET using C# language during the internship.
- Gained information on how to do market research and processes of system design.

Hyperlink Digital Library
Software Engineer Intern

Istanbul, Turkey

Jun. 2021 - Jan. 2022

- Developed a cross-platform mobile application of an e-Book Library with Flutter. Deployed at **Google Play Store** and **App Store** on January'22.
- Helped develop Semantic Search API in an e-Book Library with Python Flask, Redis and MySQL.

Projects

Solving the Multi-layer Thin Films Problem with Optimization Techniques
Research Student

Jun. 2023 - Jan. 2024

- Under the supervision of Prof. Dr. Burak Kocuk and within the scope of Sabancı PURE program, aimed to optimize the reflectivity of a metallic substrate by carefully selecting and layering dielectric materials, utilizing mixed-integer nonlinear programming techniques using Python.
- As a result of the developed models and heuristic approaches, created a producable thin film with a reflectance level of 99.8% in the visible light wavelength range.

Delivery Route Optimization at E-Bebek Company
Team Leader - Algorithm & Back-End Developer

Oct. 2022 - Jun. 2023

- Under the supervision of Prof. Dr. Bülent Çatay for graduation project, developing an algorithm that, deal with Vehicle Routing Problem (VRP) variant that matches orders with the delivery vehicles in E-Bebek Company and determines visualizes the vehicle routes, with Python.
- As a result of the analyzes made after the developments, it is expected that the cost will be reduced by 20% and $150K per year with the routes created using the new model.

Voidture, E-Commerce Platform
Lead Mobile Application Developer & Back-End Developer

Feb. 2022 - Jun. 2022

- Developed an e-commerce mobile application for Furniture using Flutter and led the mobile application team.
- Took part in the demo presentation of the application. Used Jira and Bitbucket to maintain the project.
- Worked on the service development part of the application using FastAPI, PostgreSQL, Redis and Docker.

SUprerequisites, Analyzing Prerequisites of Courses of Sabancı University
Algorithm & Back-End Developer

Oct. 2021 - Jan. 2022

- Under the supervision of Prof. Dr. Hüsnü Yenigün, developed an algorithm and a script with Python to collect and analyze the prerequisites of Sabancı University courses. Visualized the analyzed data using JavaScript and Python Flask.

SUchedule, Mobile Application
Full-Stack Developer

Sep. 2021 - Oct. 2021

- Developed a mobile application (SUchedule) with React Native and back-end service with Python Flask, allowing Sabancı University students to create their schedules with a friendly user interface.
- Deployed the project at **Google Play Store** and **App Store**. Reached 5000+ downloads with 4.9/5 ranks.

WakeGuard, Location Based Alarm Application
Mobile Application Developer

Jan. 2021 - Feb. 2021

- Created location tracking and alarm application with React Native and Firebase named WakeGuard and leading the project.
- Deployed the project at **Google Play Store** and **App Store**. Reached 1000+ downloads with 4.8/5 ranks.

Competitions & Honors & Certificates

COMPETITIONS

2022	**ITU ACM Algocomp'22,** Ranked 15th with my team among 300+ teams in the competition which is an algorithm-based coding competition.	*Turkey-Wide*
2021	**Inzva Hackerspace,** Ranked 1st at Sabancı University and 9th on overall with my team among 200+ teams in the competition which is an algorithm-based coding competition.	*Turkey-Wide*

HONORS

2023	**Sakıp Sabancı %100 Encouragement Scholarship,** Awarded for academic achievement	*Turkey-Wide*
2023	**Dean's High Honor List,** Achieving grade more than 3.5 over 4.0.	*Turkey-Wide*
2022	**Sakıp Sabancı %100 Encouragement Scholarship,** Awarded for academic achievement	*Turkey-Wide*
2022	**Dean's High Honor List,** Achieving grade more than 3.5 over 4.0.	*Turkey-Wide*
2021	**Dean's High Honor List,** Achieving grade more than 3.5 over 4.0.	*Turkey-Wide*
2019	**High Success Scholarship,** Ranked 1365th among 1,500,000+ students (0.09 percentile)in National University Entrance Exam (YKS 2019).	*Turkey-Wide*