IRMAK GUZEY

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EXPERIENCES

- **New York University CILVR Lab, Research Assistant,** 2021 October- Present, New York
  Responsibilities & Projects:
  - **Working on self-supervised exploration and reinforcement learning on navigation. Assembled a robot car and implemented ROS scripts to navigate the robot randomly.**
  - **Used the data collected from the car on different state-of-art exploration papers to imitate their performance.**
    Requirements:
    Knowledge in state-of-art exploration and self-supervised navigation in reinforcement learning.
    Advanced knowledge in ROS and Python's machine learning libraries pytorch, keras, tensorflow.

- **DOF Robotics, Computer Engineer,** 2020 December - 2021 August, Istanbul
  Responsibilities & Projects:
  - **Implementing the software of a fully autonomous warehouse AGV (automated guided vehicle) using ROS and Nvidia Isaac.**
  - **Being the main robotics developer in building the AGV. Built the whole system for mapping (SLAM), navigation stack, motors and sensors integration to ROS.**
  - Apart from integrating ROS packages to the system, I have manipulated Navigation Stack costmap to build highways and restricted areas in a warehouse and built a high-level planning system for creating waypoints for robot to go through while reaching a goal. Both of these helped robot to navigate smoother.
    Requirements:
    Knowledge in basic robotics algorithms, 2D & 3D SLAM using camera and lidar, navigation, basic image processing.
    Advanced knowledge in ROS, Gazebo and Rviz. Confidence in Navigation Stack, Mapping systems and related ROS packages.

- **Google (Youtube), Software Engineer Intern,** 2020 July - 2020 December, Paris
  Responsibilities & Projects:
  - **Experimented on improving Youtube's video, channels and playlists annotation system with feature engineering on machine learning models.**
    Requirements:
    Advanced knowledge in Machine Learning approaches and feature engineering.
    Confidence in Tensorflow Extended (TFX).
    Used Python for machine learning implementations and C++ for infrastructure.

- **Bogazici University Robotics Lab, Apprentice Researcher,** 2017 - 2020, Istanbul
  Responsibilities & Projects:
  - **Developed a ROS driver into a three-wheeled omnidirectional robot.**
  - **Implemented an interface predicting next states of multiple interacting objects in a 2D environment using Graph Neural Networks.**
  - Worked on human motion modelling in 2D & 3D environment using Graph Neural Networks. **Attended Long-Term Human Motion Prediction Workshop of International Conference of Robotics and Automation (ICRA) 2020 with workshop paper Human Motion Prediction with Graph Neural Networks.**
    Requirements:
    Intermediate knowledge in ROS (Robot Operating System).
    Intermediate knowledge in Raspberry Pi pins and how to combine them with ROS pipelines.
    Confidence in Machine Learning library Tensorflow Keras.
    Used Gazebo and V-Rep for simulation.
    Used Python and C++ for implementations.

- **X, Software Engineer Intern,** 2019 June - 2019 September, Munich
  Responsibilities & Projects:
  - **Implemented a web interface to connect to a robot arm and control it.**
    Requirements:
    Confidence in Kubernetes, Docker and gRPC technologies.
    Used Python to communicate with robot arm and Javascript for implementing web interface.

- **Google, Software Engineer Intern,** 2018 June - 2018 September, Zurich
  Responsibilities & Projects:
  - Worked on integrating UEFI Extraction's results into the pipelines of malware detection systems.
    Requirements:
    Familiarity with Google's pipelines.

Knowing how the booting of an operating system works both in software and hardware aspects.
Used C++

- **Bogazici University IT Club, Instructor in Python Workshop,** 2018 April, Istanbul
  Responsibilities & Projects
  - Taught students basics of Python programming language in a 5 weeks course.

RESEARCHES & PUBLICATIONS

- **I. Guzey, A. E. Tekden, E. Samur, E. Ugur. "Human Motion Prediction with Graph Neural Networks".** ***Long Term Human Prediction Workshop(LHMP) of International Conference of Robotics and Automation (ICRA),*** **2020.**

TEACHING

- Teaching Assistant in NYU Spring 2022 DS-GA 3001 Introduction to Computer Vision class.

EDUCATION

- 2021-Present
  New York University, Master's Degree
  Major: Computer Science
  GPA: 3.8/4.0
- **2020 Fulbright Scholar**

- 2016 - 2020
  Bogazici University, Bachelor's Degree
  Major: Computer Engineering
  GPA: 3.69 / 4.0

- 2011 - 2016
  Kadikoy Anadolu Highschool
  GPA: 93 / 100

EXPERIENCE IN STUDENT ENGAGEMENT

- **Yükseköğretim Kalite Kurulu (Higher Education Quality Council of Turkey), Student Evaluator**
  2018 December
  Got selected by the university as the student evaluator for Higher Education Quality Council of Turkey.
  This council creates different groups of students and teachers which go to universities all around Turkey and evaluate them according to the quality of their education.

- **Kadikoy Anadolu Highschool English Theatre Club, President & Director,** 2012 - 2015
  Founder of the English Theatre Club in Kadikoy Anadolu Highschool.

COMPUTER SKILLS

- ROS (Robot Operating System)
- Tensorflow
- Gazebo & V-Rep Simulation Systems
- Raspberry Pi
- Arduino
- Android Development (Android Studio)
- C/C++ (Advanced - More than 15.000 lines)
- Java (Advanced - More than 10.000 lines)
- Python (Advanced - More than 15.000 lines)
- Keras
- Pytorch
- Hydra
- Javascript
- Kubernetes
- Docker
- gRPC
- Vue.js
- SQL

OTHER SKILLS & ACTIVITIES

- C1 Level in English
  TOEFL: 100
- B1 Level in German