Zeynep Seker

Belmont, MA, 02478 · 617-775-3211

zeynepseker1999@hotmail.com • web portfolio: zseker.github.io • www.linkedin.com/in/zeynep-seker

EDUCATION

AUG 2017 - MAY 2021

ROBOTICS ENGINEERING | WORCESTER POLYTECHNIC INSTITUTE

MECHANICAL ENGINEERING | WORCESTER POLYTECHNIC INSTITUTE

GPA: 3.73/4.0

WPI Dean's List: 2018, 2019, 2020, 2021

WPI Outstanding Service Award: 2019-2020 & 2020-2021

WPI Peer Learning Assistant of the Year Honorary Mention: 2020-2021

Provost's MQP Award Honorable Mentions: Autonomous Drone Pollination (2020-2021)

EXPERIENCE

JR. ROBOTICS ENGINEER | VEO ROBOTICS | DEC 2021 – PRESENT

- Programming internal data analysis tools and test cases for fpga protocols using Python
- Configuring and optimizing workcells using the company's safety system in house and at customer sites
- Setting up industrial robots from a variety of manufacturers - Fanuc, ABB, Kuka, Yaskawa, Kawasaki
- Testing, and experimenting with new features
- In charge of preparing and maintaining Robot Support Packages and documentation on system configuration
- Working with PLC logics - Allen Bradley, Siemens

SYSTEMS ENGINEER INTERN | VEO ROBOTICS | JUL 2021 – DEC 2021

- Setting up and performing velocity tests on industrial robots by different manufacturers - Fanuc, ABB, Kuka.
- Wiring and establishing communication between the robot controller and the company product
- In charge of preparing Robot Support Packages
- Preparing and maintaining configuration documentation

SENIOR ROBOTICS LAB ASSISTANT | WORCESTER POLYTECHNIC INSTITUTE | SEPT 2020 – MAY 2021

- Overseeing lab/student assistants - over 20 student workers, and 5 labs during this position
- Provided communications between departments and staff
- Coordinated the accessibility and resources of the lab
- Making sure the lab courses were running smoothly
- I was chosen for this job due to my leadership skills and outstanding service as a lab assistant in the prior years. This is the highest management position a student could have for the Robotics Department.

ASSOCIATE ENGINEER | FANUC | MAY 2019 – JUL 2019

- Intern at FANUC Robotics
- In charge of the revision of ongoing paint shop designs
- Reviewed modified designs and corrected respective AutoCAD drawings
- Prepared design folders for customers
- Trained on building and manipulating industrial robot arms
- Worked on robotic arm structures and wiring schematics

ROBOTICS LAB ASSISTANT | WORCESTER POLYTECHNIC INSTITUTE | NOV 2018 – SEPT 2020

- Filling student part orders, stocking and updating inventory
- Preparing student laboratory kits and instructions for robotics classes
- Maintaining the lab's needs on a daily basis

SKILLS

DESIGN: AutoCAD, SolidWorks, Adobe Photoshop, Adobe Illustrator, Adobe Premiere Pro, Fusion 360, Scene Builder, ESPRIT CAM, ANSYS

PROGRAMMING LANGUAGES: Python, Java, MATLAB, ROS, C++, RAPID, MathCAD, Maple, JavaFX

SOFTWARE DEVELOPMENT TOOLS: IntelliJ, Eclipse, Visual Studio Code, Robot Studio, Work Visual, Github, Linux - Ubuntu, Allen Bradley PLC, Siemens PLC

INDUSTRIAL ROBOTS/CONTROLLERS: Fanuc, ABB, Kuka, Yaskawa, Kawasaki

AGILE PROJECT MANAGEMENT TOOLS: Github Projects, OpenProject, Trello, Slack, Odoo

PROTOTYPING: 3D Printing, Laser Cutter, Machine Shop User

LANGUAGES: Turkish (Native), English (Fluent), French (Beginner)

CLASSES AND PROJECTS

SOFTWARE ENGINEERING

- The Project Manager on a software team designing a navigational kiosk application for Brigham and Women's Faulkner Hospital
- Responsible for managing project tasks, coordinating the team, and keeping all of the members motivated
- Led using agile methodology
- A Software Engineer for the team
- Used an A* Path Finding algorithm for the navigational computation
- Used Scene Builder and Java FX for building user interface
- Used Apache Derby for the application database
- Designed graphic content on Adobe Photoshop

AUTONOMOUS DRONE POLLINATION – MAJOR QUALIFYING PROJECT

- Developed a drone capable of autonomous pollination in a region
- Designed and developed a search algorithm that locates flowers navigates between them
    - Written in C++ on a Raspberry Pi Zero
- Designed, tested, prototyped and manufactured an actuated end effector used for pollen distribution
- Helped design, test, prototype and manufacture a drone
- Used on-board processing for dynamic image tracking
- Established communication with an onboard flight controller

INDUSTRIAL ROBOTICS

- Programmed a virtual ABB robot to perform various tasks
    - Used RAPID programming language on RobotStudio
    - Palletizing, object manipulation

ADVANCED DESIGN ENGINEERING

- Collaborated with iRobot to design a testing infrastructure for their vacuum
- Automated the preparation of a test environment
- Increase the efficiency of testing.

UNIFIED ROBOTICS III (MANIPULATION)

- Programmed a 3 degrees of freedom robot arm to perform trajectories
- Located and sorted object with image processing and dynamic camera tracking using MATLAB.
- Integrate an algorithm to calculate forward and inverse kinematics of the arm's end effector relative to its home position and manipulate surrounding objects.

UNIFIED ROBOTICS IV (NAVIGATION)

- Programmed a Turtlebot3 Burger to map and navigate a maze using the attached LIDAR
- Detected and simulated an arbitrarily constructed maze using Python and ROS
- Navigated through the maze using A* path finding, and SLAM

UNIFIED ROBOTICS II (SENSING)

- Designed and programmed a robot to detect an arbitrary flame using an IR camera.
- Used an IMU and a rangefinder to navigate the field within set boundaries

CONTROLS LAB CURRICULUM DEVELOPMENT

- Designed a lab structure and curriculum for undergraduate students
    - Established controls over a two-wheeled self-balancing robot
    - Programmed in C++ and MATLAB.

EMBEDDED SYSTEMS

- Programmed simple games and clocks on TI MSP430 microcontroller
- Used C++ to program games such as a rendition of "Space Invaders"
- Displayed the game on a screen and controlled using a keypad.