Ogulcan Isitman

- 16 April 1991
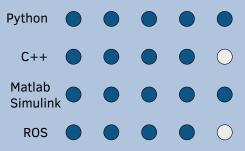- Espoo / Finland
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About me

As a Ph.D. candidate at Aalto University, my specialization lies in robotic manipulation and magnetic navigation systems for medical applications. With proficiency in Python, Matlab/Simulink, and C++, I have experience in the design and development of autonomous and intelligent systems. My academic pursuits encompass optimal control, reinforcement learning, and control system design.

Programming Skills —

Python	● ● ● ● ●
C++	● ● ● ● ○
Matlab Simulink	● ● ● ● ●
ROS	● ● ● ● ○

(*)The skill scale is from 0 (Fundamental Awareness) to 5 (Expert).

Languages

- Turkish (Native)
- English (Fluent)
- Finnish (Beginner)

Hobbies

Piano ,Board Games, Reading

Education

2019-	**Aalto University** PhD, Electrical Engineering and Automation	Finland
2015-2018	**Izmir Institute of Technology** M.Sc. Mechanical Engineering / Robotics (CGPA: 3.56/4)	Turkey
2013-2014	**Universitat Rovira i Virgili** Erasmus Exchange Program	Spain
2013-2017	**Anadolu University, Eskisehir** B.Sc. in Business Administration (CGPA: 3.36/4)	Turkey
2009-2015	**Ege University** B.Sc. in Mechanical Engineering (CGPA: 3.05/4)	Turkey

Experience

2019 -	**Aalto University**	Research Assistant

Focused on magnetic manipulation for medical applications, ranging from macro to nanoscale. I developed an electromagnetic needle system for cellular measurements and manipulation. Building on this, I implemented an optimal controller for magnetic navigation in endoscope pills.

Teaching Duties: Modelling, Estimation and Dynamic Systems

2017 - 2019	**Izmir Institute of Technology**	Research Assistant

I specialized in the design and deployment of compliant controller algorithms, essential for the safe teleoperation of endoscope robots in pituitary gland surgeries.

Teaching Duties: Numerical Methods and Programming, Control System Design, Haptics and Teleoperation, CAD Design

2015 - 2016	**Dr.Oetker**	Mechanical Engineer

I took responsibility for planning maintenance to ensure uninterrupted operations.

2015 - 2016	**Lansinoh Laboratories**	Intern R&D Engineer

Engaged in the design and execution of tests for the prototyping phase.

Research and Area of Interest

- Robotic manipulation , Haptics, Intelligents systems
- An Electromagnetic Actuation System for 3DOF Micromanipulation (BSc Thesis)
- Compliant Control Of A Teleoperated Endoscope Robot (MSc Thesis)
- Robotic Magnetic Needle Characterization of Nanoparticle Uptake in Cells (PhD Thesis)

Certificates

- Mechanism Design for Medical Application (IFToMM)
- ROS Winter School (MCI Austria)
- 3D CAD & Additive Manufacturing (TMMOB)
- Marketing (Ege University)

Publications

- Işıtman, O., Bettahar, H., Zhou, Q. (2021). *Non-contact cooperative manipulation of magnetic microparticles using two robotic electromagnetic needles*. IEEE Robotics and Automation Letters, 7(2), 1605-1611.

- Isitman, O., Kandemir, H., Alcan, G., Cenev, Z., Zhou, Q. (2022, July). *Simultaneous and Independent Micromanipulation of Two Identical Particles with Robotic Electromagnetic Needles.* In 2022 International Conference on Manipulation, Automation and Robotics at Small Scales (MARSS) (pp. 1-6). IEEE. **Best Robotics Paper Award**

- Işıtman, O., Ayit, O., Vardarlı, E., Hanalioğlu, Ş., Işıkay, İ., Berker, M., Dede, M. İ. C. (2019). *Viscoelastic modeling of human nasal tissues with a mobile measurement device*. In New Trends in Medical and Service Robotics: Advances in Theory and Practice (pp. 216-224). Springer International Publishing.

- Işıtman, O., Dede, M. İ. C. (2019). *Control methods for a teleoperated endoscope robot.* In Advances in Mechanism and Machine Science: Proceedings of the 15th IFToMM World Congress on Mechanism and Machine Science 15 (pp. 2077-2086). Springer International Publishing.

- Işıtman, O., Ayit, O., Dede, M.İ.C. (2018). T*he Effects of Admittance Term on Back-Drivability*. In: Dede, M., İtik, M., Lovasz, EC., Kiper, G. (eds) Mechanisms, Transmissions and Applications. IFToMM 2017. Mechanisms and Machine Science, vol 52. Springer, Cham.

- Işıtman, O. (2018). *Compliant control of a teleoperated endoscope robot* (MSc dissertation, Izmir Institute of Technology (Turkey)).