CV

Tokyo, Japan

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sameterkek.com

Robotics Software Engineer | Motion & Control Systems

Abdul Samet Erkek

Result-driven Robotics Software Engineer with over 5 years of hands-on experience in developing and deploying robust solutions for complex, real-world robotic systems. Deep expertise in motion planning, inverse kinematics, and closed-loop control systems for applications ranging from high-dexterity robotic hands to mission-critical avionic units. Proficient in C++, Python, and ROS, with a proven ability to architect full-stack mechatronic systems from concept to integration. Passionate about creating human-centric technologies that bridge the gap between theoretical algorithms and practical, impactful applications in dynamic environments.

Skills

C/C++ · Python · C# · ROS · Motion Planning · Inverse Kinematics · STM32 · ESP32 · AI/ML · Control Theory · Flutter · GitHub · Real-time Communication · Communication Protocols · Solidworks

Experience

FRONTACT — Tokyo, Japan

Formerly MELTIN MMI, acquired by Sawai Group Holdings

Robotics Software Engineer — **2023/08 - still**

C/C++ · AI/ML · Motion Planning · Inverse Kinematics · ROS · CL Control · Flutter & Dart · Rest is confidential

Engineered mission-critical software for a medical device, including an AI-powered signal prediction algorithm and real-time microcontroller communication protocols.

Developed a high-performance inverse kinematics solver and closed-loop motion/force controllers for a multi-DOF, wire-driven robotic hand, enabling precise manipulation tasks.

Created a high-fidelity digital twin of the robotic hand in a dynamic simulation environment for algorithm testing, validation, and rapid prototyping.

Led the end-to-end development of new features for the companion mobile application (Flutter), from UI/UX design to final implementation.

BAYKAR TECHNOLOGY — Istanbul, Turkey

a.k.a BAYRAKTAR

Software and Prototype Development Engineer — **2021/07 - 2022/07**

STM32 · C/C++ · Communication Protocols · Python · ML · Aviation · UAV Piloting · Rest is confidential

Developed algorithms, software for mission-critical avionic units, focusing on real-time communication, control, and optimization for UAV systems.

Implemented robust communication protocols (CAN, SPI, UART) and low-level drivers for various sensors and actuators on STM32 platforms.

Spearheaded the development of a custom Engine Control Unit (ECU) from scratch, implementing physics-based control algorithms for injection/ignition timing to optimize engine performance.

SINTERTEK — Istanbul, Turkey

Mechatronics Engineer — **2018/08 - 2020/01**

Solidworks · Simulation · Manufacturing Methods · System Integration · PID Control · 3D Printer · Motion Planning · C# · Sensors and Actuators

Led the complete mechatronic system design for multiple industrial 3D printer projects, from CAD and component selection to manufacturing and system integration.

Optimized thermal distribution and control algorithms for the Sinterjet 450 Pro (SLS 3D printer), significantly improving part quality and build consistency.

Developed a user-facing GUI for a new line of metal 3D printers, enhancing usability and operator efficiency.

Internships

Software Engineer Intern @ ESIT Electronic	2018/05 - 2018/08 Istanbul, Turkey
Research Lab Assistant Engineer	2017/11 - 2018/02 Aalen, Germany

CV

Education

M.Sc. in Control & Automation Engineering

Boğaziçi University **Istanbul, Turkey**

Studies paused to pursue career opportunity in Japan

B.Sc. in Mechatronics Engineering 2013 - 2019

Yıldız Technical University **Istanbul, Turkey**

Attanded to Erasmus Exchange Program Hochschule Aalen, Germany

Languages

English	Full Professional Proficiency
Japanese	Limited Professional Proficiency
Turkish	Native

Achievements

Competitions

NASA CANSAT Competition - Solar Powered Glider

Sponsored by NASA, American Astronautical Society, Siemens
World 5th in Report and Design
World 8th in Overall Space Missions
Texas, USA

TURKSAT Model Satellite Competititon 2017

1st Place
Istanbul, Turkey

Conference and Publication

2017 8th International Conference on Recent Advances in Space Technologies (RAST 2017)

"Design of solar-powered subscale glider for CanSat competition" 2017 8th International Conference on Recent Advances in Space Technologies (RAST), Istanbul, 2017, pp. 453-457.

Volunteering

Co-founder of Space and Avionic Systems Club,
Yildiz Technical University, Istanbul, Turkey

Instructor at UASK at SolidWorks, Arduino, Robotic Control seminars

Certifications

2020/3 - Certificate of Participation to Advanced Entrepreneurship
2021/3 - Certificate of Completion of Applied ROS Training

My Projects

For details of competitions and personal projects, please check https://www.sameterkek.com

mytwinmind.com - AI-supported Social Media Platform
12 DOF Cat-like Quadruped Robot
Autonomus Drone with Image Processing
FDM 3D Printer
Multifunctional 5-axis CNC Router

References

Contact information will be given upon request.

Toru Ichihashi
Director of the Board, COO, CFO (Former) Meltin MMI

Tolgahan Akbulut
Light-Weight Platforms Flight & Mission Control Eng. Leader Baykar

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