

AHMED KAMEL

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Summary

Robotics Development & Systems Engineer (Integration, Test Automation, Reliability)

Robotics engineer with 5+ years delivering production automation at scale and research/development across robotic systems. Strengths in building tooling/firmware to accelerate commissioning and validation, improving reliability through data-driven debugging, and partnering across ME/EE/SDE/ops and vendors to ship robust systems.

Core Competencies: Robotics systems integration • Test automation • Embedded/firmware prototyping • Machine vision workflows • Failure analysis (RCA) • Commissioning & bring-up • Tooling (Python/Bash/Linux) • Mechanical/electrical interfaces

Technical Skills

- **Languages:** Python, C/C++, Bash, SQL, R
- **Robotics/Automation:** ROS2, PLC programming, industrial robotics, real-time embedded concepts, control systems fundamentals
- **Software/Infra:** Linux, Git, CI/CD pipelines, AWS, scripting for validation/commissioning workflows
- **Mechanical/Simulation:** SolidWorks, AutoCAD, ANSYS, additive manufacturing (3D printing)
- **Data/AI:** Computer vision workflows, model prototyping, performance analysis

Experience

Amazon Robotics, Seattle, WA

Jul 2024–December 2025

Robotics Systems Development Engineer II (L5)

- Promoted in recognition of outstanding performance in driving large-scale deployment and optimization of robotic fulfillment solutions.
- Designed custom anchor alignment solution(s) to improve install repeatability; reduced installation time from 2 hours to 10 minutes per station and saved 72 labor hours at major sites.
- Built automation enabling off-site commissioning ahead of full network readiness; shortened deployment schedules by up to 50% in pilot projects.
- Contributed to hardware design reviews and developed power solutions for sensor systems; reduced deployment risk and eliminated extra power drops in retrofits, avoiding over \$2M in retrofit costs.

Amazon Robotics, Seattle, WA

Nov 2022–Jul 2024

Robotics Systems Development Engineer I

- Commissioned over 59 robotic cells at key installation sites across three geographic locations across North America, completing retrofit installations in half the usual time.
- Developed custom Bash scripts that automated critical network commissioning tasks, reducing wait times by over 11 hours per cell and saving a total of 649 labor hours.
- Developed and standardized time studies to capture baseline cycle times, identifying a 60-hour overestimation for installation tasks and averting an additional 1,440 work hours across 24 cells.
- Authored custom machine vision firmware that reduced manual video review time by 60%, enabling parallel data collection and analysis at multiple locations.

Amazon Robotics, Seattle, WA

Jun 2021–Nov 2022

Robotics Integration Engineer I

- Commissioned 250+ robotic cells at 15 sites, proactively identifying design flaws that prevented over \$1.1M in retrofit costs.
- Automated software validation processes, reducing commissioning tasks from 3 days to 40 minutes and standardizing deployment plans.
- Delivered commissioning ahead of schedule by 5 weeks, saving \$460K in third-party labor and setting a new on-site deployment benchmark.
- Led on-site teams of over 200 engineers and technicians in physical deployment, remote troubleshooting, and PLC programming, ensuring safety compliance and efficient handoffs.

Hands-On Labs (Incubated at Minerva University), San Francisco, CA

May 2020–Aug 2025

Lead Robotics Engineer & Researcher (Part-Time)

- Architected a full-stack remote robotics platform (Patent Pending), integrating a Flask back-end with a custom front-end interface to enable autonomous remote operation for students.
- Designed a Python-based scripting API that allowed users to execute complex motion sequences (e.g., contouring), serving as the core technical foundation for advanced robotics curricula.
- Led and mentored a team of four junior engineers, defining the technical roadmap and managing the development lifecycle from prototype to deployment.

Mistletoe Inc., Tokyo, Japan

Jul 2019–Sep 2019

Robotics Developer Intern

- Designed and delivered interactive robotics and programming lessons, engaging students in hands-on problem-solving and boosting skill retention.
- Built unmanned ground vehicles as educational platforms, demonstrating real-world engineering principles in a classroom setting.
- Collected performance data on student comprehension and iterated curricula, improving lesson efficacy and engagement metrics.

Hyundai Motors, Seoul, South Korea

Sep 2018–Dec 2018

Software Development Engineer Intern

- Contributed to software features aimed at streamlining manufacturing workflows, improving worker efficiency across multiple assembly lines.
- Supported real-time experiments to measure workforce performance, applying data-driven insights to optimize processes and reduce bottlenecks.

Education

Michigan State University, East Lansing, MI

Dec 2025

M.Sc. in Electrical and Computer Engineering (GPA: 3.85/4.0)

- Specialized in robotics and autonomous systems.
- Completed coursework in Robotics, Advanced Power Systems, Micro-Electro-Mechanical Systems (MEMS), and Advanced Wireless Communication and Networking.
- Participated in research projects integrating AI-driven control algorithms for next-generation robotic platforms.

Minerva University, San Francisco, CA

May 2021

B.Sc. Double Major in Computational Sciences (AI) and Business (Brand Management) (GPA: 3.81/4.0)

- Awarded a full-tuition scholarship.
- Completed rigorous coursework in advanced mathematics, machine learning, and business strategy.

Research & Publications

Hands-On Labs: Remote Robotics Lab for Education (Patent Pending)

- Designed and implemented a scalable, remotely accessible lab enabling real-time student interaction and experimentation.
- Awarded \$20,000 by Minerva University and \$10,000 by Vela Education Fund.

“The Power of Many”: Self-Reconfigurable Modular Robotics

- Developed an innovative self-reconfiguration algorithm and bonding mechanism.
- Secured \$10,000 from a Micro Research Grant (Center for Special Studies and Programs).

Publications & Conference Presentations

- **Invited Speaker, IROS 2024:** Represented Amazon Robotics at the IEEE/RSJ International Conference on Intelligent Robots and Systems, presenting on "Robotics at Scale".

Leadership & Accomplishments

- **Microsoft Imagine Cup 2021:** 1st place for an AI-driven solution (10,000 teams)
- **Hack the Crisis Iceland (Ministry of Education):** 1st place for creating a pandemic response platform
- **AT&T First Responders Hackathon:** 1st place for an emergency services application (230 teams)
- **Samsung Applications Development Hackathon:** 1st place with an innovative mobile application
- **World Adolescent Robotics Contest, Beijing:** 3rd place & Best Design (130 teams)
- **Sharjah International Book Fair:** Invited speaker on robotics education and innovation
- **World Robotics Olympiad, Jakarta:** Ranked Top 15 (25,000 teams).
- **Intel ISEF:** 4th Grand Award for a maritime rescue robotics project (2,400 participants)

Certifications

- Certified SolidWorks Mechanical Designing Professional (C-G887KPJ4CK)
- OSHA-10 Certification (Industrial Safety)
- Advanced C Programming for Embedded Applications

Languages

- **English:** Fluent | **Arabic:** Native | **Turkish:** Professional working proficiency