Abdulmumin Abdusattorov

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Education

University of Karabuk – BS in Mechatronics Engineering – GPA **3.15**/4.00 — Karabuk, Türkiye | 2020-2024
NTUA – BS in Electrical and Computer Engineering (Erasmus+) – GPA **3.2**/4.00 — Athens, Greece | 2022-2023

Experience

Mechatronics Engineer, CFYI -Fablab – Tashkent, Uzbekistan 11/2024 – Continue

- Led prototyping and product development for national engineering competitions, including a weather station project, utilizing CNC machining, laser cutting, and advanced 3D printing techniques.
- Developed and maintained comprehensive 2D/3D CAD models and detailed technical documentation using SolidWorks, Fusion 360, and AutoCAD, aligning with ISO and GOST standards, improving project handover efficiency and saving roughly **$2,500** annually in labor and revision costs.
- Collaborated closely with multidisciplinary teams to optimize product designs for cost-efficiency and manufacturability, achieving an estimated cost reduction of **15%** per prototype.
- Spearheaded end-to-end product development from concept to production, including CAD modeling, technical documentation, prototyping, testing, and manufacturing oversight, ensuring all solutions meet industry standards, cost targets, and performance requirements.
- Oversaw fabrication processes, implemented a version-controlled design database, and maintained strict compliance with industry safety and quality standards, reducing production errors and rework.

Junior Mechatronics Engineer, ID Partner – Grenoble, France 09/2023 – 04/2024

- Redesigned and developed 0.1 mm air gap rotatable gear mechanics for electromagnetic mechanical switches, achieving a ~50% cost reduction by minimizing material waste, streamlining assembly, and improving manufacturability.
- Created detailed CAD designs using SolidWorks and Fusion360, prototyped models with 3D printers (FDM, SLS) and CNC machines, and tested in both controlled lab environments and field trials.
- Utilize ANSYS software for performing simulations, including structural, thermal analysis to ensure the design meets performance, durability, and safety requirements for induction industry projects.
- Developed a ready-to-use copper conductor calculator with MATLAB simulation and GUI by researching Litz wire losses in the 200 kHz–1 MHz frequency range and analyzing B-H curves.
- Designed the CAM for the water-cooled plate, resulting in a 30% increase in stability, reducing the risk of system failure during high-temperature tests, and enhancing operational efficiency.

3D Printer R&D intern, TÜBİTAK – Karabuk, Türkiye 06/2022 – 09/2022

- Collaborated with PhDs to develop next-gen 3D printers for horizontal printing in molding operations, contributing to structural design using SolidWorks and creating 20+ printable parts for the prototype.
- Performed structural stress and strain analysis using ANSYS to validate conveyor belt systems for load capacities of 10-15 kg, ensuring operational reliability and safety.
- Assisted in designing and implementing control systems for conveyors using Arduino Mega and Raspberry Pi for motor control, while developing mathematical and dynamic models and simulating the systems with Simulink and Simscape.

Projects

Founder & Team Captain, Team “FAZO” – MathWorks Minidrone Competition

- Developed autonomous navigation algorithms using MATLAB, enabling reliable path tracking and obstacle avoidance for future applications like drone delivery, commercial drone, logistics.
- Designed real-time data processing algorithms to improve drone adaptability, supporting AV operations emergency response.

InnoTechnopark - Team Leader - First UAV Prototype

- Led the structural design of UAV prototype, utilizing CATIA V5 for 3D modeling and nite element analysis (FEA) with ABAQUS to ensure optimal performance and structural integrity under various flight conditions.
- Conducted in-depth material analysis to select cost-effective yet high-performance materials, considering factors such as strength-to-weight rao, durability, and manufacturing feasibility.

Technical Skills

CAD: SolidWorks, Fusion360, AutoCAD, 3D printing Slicers, (Advanced design, modeling, rendering).
Analysis: ANSYS, FEMM, MATLAB, Comsol, Simulink, Simscape, Structural.
Programming: C, C++, Python, MATLAB (control algorithms, embedded programming).
Manufacturing and Prototyping: 3D printers (SLA, FDM) , CNC, Laser Cutting, Milling Machines

Soft Skills

Interpersonal: Effective Communication, Collaboration and Teamwork, Cultural Sensitivity, Practical Troubleshooting
Languages: Uzbek(native), Turkish(~native), English(C1), Russian(A2).