Nisan Kotik

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Professional Summary

MEng Aerospace Engineering student from the University of Bath with a successful year-long placement at Moog Controls. Demonstrated hands-on experience in mechanical design, stress analysis (Ansys), and simulation (Python). Proven ability to lead design projects, manage complex assemblies in Teamcenter, and develop custom software solutions. Eager to apply a strong technical foundation and a collaborative mindset to solve complex challenges in a fast-paced, technical environment.

Education

University of Bath - MEng Aerospace Engineering *Sept 2021 – June 2026*

Hinchley Wood Sixth Form *Sept 2018 – Aug 2020*

- A-Levels: Further Mathematics, Mathematics, Physics

Technical Skills

Engineering Software: Siemens NX, Ansys, AutoCAD, Inventor Pro.

Programming Languages: Python, C, MATLAB

Machine learning frameworks: Darknet, TensorFlow.

Development Tools: Teamcenter, Git, Linux

Professional Experience

Mechanical Engineering Placement, Research and Development *Aug 2023 – Sept 2024*
Moog Controls Ltd, Tewkesbury, UK

Design Engineer Lead

- Led the mechanical design of a novel levelling platform for a semi-autonomous mobile solar panel lift-assist system ("CrewMate").
- Managed the mechanical design from concept and prototyping through manufacturing and delivery, ensuring the final product could withstand up to 2 tonnes of force.
- Coordinated with an international team, including a U.S.-based division, to integrate the new platform into existing machinery.
- Utilised Siemens NX for 3D design and Ansys for stress analysis, delivering over 50 new part drawings. Managed configuration for an assembly of over 200 parts in Teamcenter.

Excavator Mechanics Simulation

- Developed a predictive simulation in Python to model excavator mechanics, optimise design configurations, and inform key design decisions.
- The model identified a novel configuration resulting in a 15 percent improvement in force demand.
- This analytical tool is now used as a design benchmark for future development.

Automated Production Rig

- Identified an inefficiency in production and engineered an automated solution, designing a vacuum degassing rig to improve operational workflow.
- Programmed an Arduino in C for automated processes, implementing over 10 functions including time settings and emergency abort.
- Integrated the system with hardware such as solenoid valves and relay switches. The initiative demonstrates a clear ability to optimize processes for time and cost savings.

Personal Projects

Basketball Object Detection

- Developed a Python path-tracking programme using OpenCV and YOLOv4 to detect, track, and trace basketball motion.
- Utilised the NVIDIA CUDA environment to take advantage of the laptop's Nvidia 1660Ti GPU.
- Significantly improved model precision (mAP) compared to existing models by training on over 2000 labelled images and optimising for small objects.
- Built a strong foundation in machine learning for computer vision and eager to apply this knowledge professionally.

Business Venture *2020-2021*

- Launched and managed a start-up retail business selling mystery boxes with random football shirts from around the world.
- **Business Operations & Financial Metrics:** Achieved over 100 sales within the first 6 months during the Covid-19 period.
- **Revenue Model & Customer Retention:** Implemented a hybrid one-time purchase and subscription model, securing a 20 percent customer conversion rate to the subscription and building a recurring revenue stream.
- Applied project management skills to lead a small team and establish sales targets, and foster an inclusive environment that encouraged collaborative brainstorming and idea generation.

Personal Interests and Languages

I enjoy playing basketball recreationally at the university.

I enjoy reading literature, particularly science fiction by authors like Cixin Liu that explores themes of technology and its future impact.

Languages: English – Native, Russian – Native.