

# 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, product lifecycle management, mechatronics and simulation. 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
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Hinchley Wood Sixth Form - A-Levels: Further Mathematics, Mathematics, Physics	Sept 2018 – Aug 2020
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## Technical Skills

**Programming Languages:** Python, C, MATLAB

**Machine learning frameworks:** Hugging Face, Darknet, TensorFlow.

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

**Development Tools:** Teamcenter, Git, Linux

## Professional Experience

Mechanical Engineering Placement, Research and Development Moog Controls Ltd, Tewkesbury, UK	Aug 2023 – Sept 2024
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### 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 to manufacturing and delivery, ensuring the final product **could withstand up to 2 tonnes of dynamic loading**. Applied strong problem-solving and analytical thinking to make key design decisions, while demonstrating initiative and ownership throughout the project lifecycle.
- Demonstrated strong communication and interpersonal skills by effectively collaborating with cross-functional and international teams, including regular technical discussions with U.S.-based stakeholders, ensuring alignment and successful integration of the platform into existing systems.
- 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, a tool now used as a design benchmark for future development.
- Presented a novel configuration that was identified using the tool which resulted in a **15 percent improvement in force demand**.

### 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.

## Personal Projects

AI-Powered Financial News Analysis	2025
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- Developed a multithreaded web scraper using Python, Selenium, and BeautifulSoup to efficiently gather financial article titles from multiple news outlets.
- Implemented NLP models such as Facebook's **BART-Large-Mnli** model from the Hugging Face Transformers library for zero-shot classification to determine article sentiment and subject.
- Utilised additional NLP models to automatically identify keywords from the scraped titles.
- Processed and structured the classified data using Pandas DataFrames and stored the results in an **SQLLite** database for analysis.

Basketball Object Detection	2023
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- Developed a Python basketball path-tracking program using OpenCV and YOLOv4 to detect, track, and trace basketball motion.
- Utilised the **NVIDIA CUDA** environment to utilise an available NVIDIA 1660Ti GPU.
- Significantly improved model precision (mAP) compared to existing models by **training on over 2000 self-labelled images** and optimising for small objects.

Business Venture	2020-2021
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- Launched and managed a start-up retail business selling mystery boxes with random football shirts from around the world, achieving over **100 sales within the first 6 months** during the Covid-19 period. Secured a **20 percent customer conversion rate** to the subscription that built 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

**Basketball:** I enjoy playing basketball recreationally at the university.

**Reading:** I particularly enjoy science fiction by authors like Cixin Liu, Isaac Asimov, Peter Hamilton that explore themes of technology and its future impact.

**Languages:** English – Native, Russian – Native.