



Nikolas Andrew Corbas

Pan-European Permanent/Freelance Mechanical Design Engineer

Mechanical Engineering, Imperial College, London, BEng (Hons) 2.1

Aerospace Vehicle Design, Cranfield University, MSc

nik@muhanderia.com Tel: +44 7379 034 743 Reading, UK

TECHNICAL HEADLINE

CAD Proficient.
Mechanism Design.
Performance Analysis.
Systems Engineering.
Electrical Architecture Design.
Precision Component Design.
Concept Development.
Applications Development.
Cost Model Development.
Cost Reduction.
DFM / DFA.

COMMERCIAL HEADLINE

End User / OEM Experience.
Interfunction Experience.
Supplier Experience.
Languages.

AVAILABILITY

Unrestricted European Travel.
Contact to discuss.

Muhanderia Limited 2022-

Vehicle for Freelance Work
SIC: 71129

Profile

- Dual Citizen: U.K. (Born / Educated) / Greece (Hellenic Republic / Acquired).

I am an enthusiastic, well-rounded mechanical engineer with 27 years of industry experience in electromechanical design and manufacturing. I have acquired numerous design skills which can be applied to many areas. These range from detailed mathematical analysis of mechanisms and materials for space applications through to conceptual design and close work with automotive styling departments. The synthesis of all this experience assists me in designing, liaising, leading, planning and driving projects to completion in a timely manner, from inception through to project management and delivery to the customer.

Experience Summary

Electromechanical industries in the following sectors:

- Space Vehicle (Employed – UK - US).
- Military slip rings (Employed – pan-European).
- Medical slip rings (Employed).
- Wind Energy slip rings (Employed – Global).
- Power Electronics (Employed).
- Aerospace (Employed).
- Automotive (Freelancer – pan-European).
- Automotive (Employed – pan-European).

PRINCIPAL ENGINEER / DIRECTOR

Mechanical, Industrial and Systems Engineering Design Projects

- Pan-European remote-work and/or occasionally on-site.
- Equipped with licensed CAD modelling software Form-Z Pro with V-Ray.
- Conceptual and project application engineering.
- Assignments shorter than three months considered.

EXPERIENCE

Moog Inc. 2020 – 2024

Space Vehicle Integration

SENIOR PROJECT ENGINEER

Commercial UK Space Program Application. I took this varied role as it was an ideal opportunity to get involved in a Space program, requiring a wide skillset.

Key Functions, Manufacturing Assessments, MGSE / GSE development, test harness development, debugging and working with the US design team.

- Test procedure and reporting documentation creation.
- Mechanical de-bugging and reporting back to US design team.
- ATE program development and test development for main flight harness.
- Working with suppliers / development of suppliers.
- Change control system implementation.
- Design, specification, and some fabrication of MGSE and general GSE.
- 3D, FEA, 2D, CAD and some flight components design (US approved).
- Materials research and specification to ECSS and IPC620C/SA standards.
- Manufacturing methodology and process development to cleanroom and ESD standards.
- Main tools: MS office Excel and Word, Creo, ANSYS.

Moog Inc. 2009 – 2020

Slip Ring Products

SENIOR DESIGN ENGINEER

- Wind-energy, tidal energy, medical, military, aerospace, scientific and industrial.
- Fast concept production to full final detailed drawings for manufacture.
- Team enhancement / training / mentoring and management. (Direct reports: 2-4 people.)
- Extensive customer facing roles.
- Supplier management and liaison.
- Substantial periods spent building relationships with customers, developing and planning projects.
- Innovative modular design solutions for wind energy (from concept to production) with the aim of giving more compact and higher performance products at more competitive prices.
- RFQ process augmented with personalized and shared cost calculators to save time.
- Concept and development of Moog's first large diameter, high power flexible slip ring for medical applications.
- Concept and development of compact Higher-Level-Assemblies, with multiple functionalities.
- Concept of high-density rotor and slip ring which was developed into a successful product for many other platforms.

Moog Inc. 2006 – 2009

Slip Ring Products

DESIGN ENGINEER

Moog was an exciting company and from the outset I was working on the design of complex electromechanical slip rings for various industries from the complete RFQ stage through to production drawings. I was mainly involved with the wind energy sector, learning about many aspects of the industry, involved in trade shows and many personal customer engagements spanning four continents.

XP POWER. 2003 - 2006

Power Supplies and Peripherals

DESIGN ENGINEER

This role presented me with the opportunity to engage in the electronics industry as a mechanical design engineer where I used Pro-Engineer and SolidWorks as my main design tools. The role also included manufacture of prototypes I had designed, which helped me with the design process. In my own time I developed some electronic filter products based on work I had been undertaking, which started off a new line of products for the company.

Britax Ltd. 2002 - 2003

Seating

DESIGN ENGINEER

A short-term foray into the aircraft seating sector.

Corbas Ltd. 2001 - 2002

Seating

DESIGN ENGINEER

Work as an automotive freelance design engineer across Europe using CATIA design software.

Lear Corp. 1998 - 2001

Seating

PROJECT ENGINEER

Working onsite at Jaguar in Coventry on the X400 X-type and the CD132 Mondeo based in Köln, which shared the same chassis. I had to liaise closely with my counterpart in Germany to achieve maximum commonality of performance and parts. This involved close work with design engineers and styling departments, through to relocation at the manufacturing facility. I was present at the Press release of the X400 vehicle, and the seats received "best in class" in the automotive press. Extensive work across Europe.

JCI. Jan1998 – Sept1998

Seating

DESIGN ENGINEER

Work on the first "new" Mini: Airbag system integration and mechanisms.

Allied Signal. 1996 - 1997

Seating Safety Systems

DESIGN ENGINEER

Seatbelt buckle designer and analysis / testing. Work across Europe; Spain, Italy, UK.

WIPO Patent Filed 2008

Personally funded application. PCT European patent filed for aerodynamic device. An interesting exercise in terms of design, mathematical analysis and understanding the patent process. Having reviewed the patents that were sent to me by WIPO, I do believe my design has a distinct advantage over the others, mainly from a configuration point of view. International corporations were approached for full patent funding. Lockheed Martin showed some initial interest.

SKILLSET INCLUDING				
CAD	Form-Z Pro	V-Ray	Boolean solids	
	Catia-V5	ANSYS 2022	Surfacing	
	Creo	Eagle	Animation	
	SolidWorks	Auto-CAD	Detailing	
Software	PTE – Video / Animation	G.I.M.P	Photoshop	
	MS-Office (Word / XL / PPT)	Various ERP	Illustrator	
	Lychee	Basic C++	Basic Python	
Components	Precision machined parts	Dry film lubricants	Sand casting	
	Pressed parts	Wet lubricant selection	Investment casting	
	Sheet metal	Connector systems	Welding	
	Soft trim	Sensor integration	General metal fabrication	
	Mechanism design	Higher level assemblies	Fluid rotary unions	
	PCB design	Injection molding	Fiber optic rotary joints	
	Safety restraint systems	Compression molding	Encoders	
	Electrical layout	Rapid prototyping	Motors	
	Wiring and harness design	SLS (metal / plastic)	Arduino	
	Electronic components	SLA LCD printing	Coil and Solenoids	
	Resin systems	Die casting	Slip Rings	
	Methods	Modular design	Comfort mapping	PPAP
Tolerance analysis		Cost analysis	8D analysis	
DFM		Cost estimation	FMEA	
DFA		FEA Solid Structural linear	NPI	
Mathematical modelling		FEA Non-linear Analysis	Stage gate processes	
MS-Excel modelling		Styling	Rendering	
Packaging		Research and reading	IEC specifications	
Ergonomics		Giving training	DEF STAN	
Specification writing		Mentoring	MIL STDS	
Specification assessment		Problem solving	DO160	
Export Controls		Qualification definition	Testing	
Project		Managing	Planning	Customer / Supplier Liaison
EDUCATION				
MSc.1996	Cranfield University, SUPAERO Toulouse. Grant funded by EPSRC and ERASMUS	Aerospace Vehicle Design. <i>Thesis1: Design and Stressing of Nose Landing Gear for a STOVL Fighter Aircraft.</i> <i>Thesis2: Conceptual Design of a Very Large Wing in Ground Effect Transport Vehicle. (Extracts published: ISBN 0-521-65722-9).</i>		
BEng (Hons) 2.1. 1994	Imperial College, London.	Mechanical Engineering. <i>Thesis: Conceptual Design of a Knot Tying Device for Keyhole Surgery.</i>		
A – levels. 1991	Reading Grammar School.	Mathematics, Physics, Chemistry, Further Mathematics.		
Languages	English (Native). Italian (fluent working). Greek (fluent spoken). French. German.			
	License	Valid U.K. driving license		
Interests	Darkroom Photography	Design Projects	Engineering Projects	
	Art and Architecture	3D scanning	Model Making	
	Audio Electronics	Animation	Travel Photography	
	Cinema and Music	3D Resin Printing	Arduino Projects	

GENERIC GRAPHIC: SELECTED EXAMPLES

