






<h2>Personal details</h2>	<h1>Nicholas Baker</h1>	
<div>  Nickbaker64@yahoo.com </div> <div>  Linkedin.com/in/nick-baker-58390b214 </div> <div>  Wilmslow, Cheshire, UK </div> <div>  +44 (0)7719268619 </div> <div>  www.3sigmadesigns.com </div>	<h2>Space Systems Engineer</h2>	
	<h2>Profile</h2> <p>Systems manager responsible for the space-flight qualification of Solar Array Drive Mechanisms on various scientific programs for ESA. Technical representation in front of Prime and ESA in all technical reviews from PDR through to FRR. Generation of technical documentation to ECSS requirements. Overseeing mechanical, electrical, EMC, assembly, test and PA activities. Supervision of staff.</p> <p>My background covers mainly mechanical design with good experience in electrical, RF, optics, vibration, shock, analysis (stress, modal, thermal) and testing (vibration, shock, TV, friction, Quasi-Static).</p>	
<h2>Key Skills</h2>	<h2>Employment History</h2>	
<div> <div>Mechanical Eng.</div> <div>● ● ● ● ●</div> </div> <div> <div>Systems Engineering</div> <div>● ● ● ● ●</div> </div> <div> <div>3D CAD</div> <div>● ● ● ● ●</div> </div> <div> <div>Shock/ Vibration</div> <div>● ● ● ● ●</div> </div> <div> <div>RF principals</div> <div>● ● ●</div> </div> <div> <div>Analysis</div> <div>● ● ● ● ●</div> </div> <div> <div>ECSS Document</div> <div>● ● ● ● ●</div> </div> <div> <div>Hydraulics</div> <div>● ● ● ●</div> </div> <div> <div>EMC</div> <div>● ● ●</div> </div>	<div> <div> Mechanical Design Engineer (contract) - INEOS </div> <div> <ul style="list-style-type: none"> Manufacturing support – design of various jigs and fixtures for welding, laser welding and material handling. Modal, stress, thermal (dynamic and static) analysis. </div> <div> Manufacturing 04/24 – 03/25 Runcorn </div> </div>	
<h2>Main Industry Exp.</h2> <div>Space</div> <div>Robotics</div> <div>Automation</div> <div>Engine design</div> <div>Satellite Communications</div>	<div> <div> Mechanical Design Engineer (contract) - Ashtead Technology. </div> <div> <ul style="list-style-type: none"> Mechanical & Hydraulic design & analysis of sub-sea lifting equipment for underwater recovery operations. </div> <div> Sub-Sea 09/23 – 03/24 Home/ Aberdeen </div> </div>	
	<div> <div> Mechanical Engineering Manager/ Deputy CTO - MRT Ltd. </div> <div> <ul style="list-style-type: none"> Mechanical & mechatronic design of a fully autonomous self-charging robot that removes algae from a ship hull whilst the ship is in operation, reducing fuel consumption and down-time. Design of mechanism including a planetary gearbox. </div> <div> Robotics 01/23 – 06/23 Home/ Malta </div> </div>	
<h2>Software</h2>	<div> <div> Mechanical Design Engineer (contract) – 3-Sigma Designs </div> <div> <ul style="list-style-type: none"> Conceptual design of sub-sea robot for MRT Ltd. Design of a full, modular, suite of hospital storage solutions. Design of a high-end personal sanitary disposal unit. </div> <div> Mechanical Design 01/21 – 12/22 Home base </div> </div>	
<div> <div>SolidWorks</div> <div>● ● ● ● ●</div> </div> <div> <div>SolidWorks Simulation</div> <div>● ● ● ● ●</div> </div> <div> <div>Pro/Engineer Wildfire</div> <div>● ● ● ● ●</div> </div> <div> <div>Siemens NX</div> <div>● ● ● ● ●</div> </div> <div> <div>AutoCad Inventor</div> <div>● ● ● ● ●</div> </div> <div> <div>NASTRAN</div> <div>● ● ●</div> </div> <div> <div>PDM/ Vault</div> <div>● ● ● ● ●</div> </div> <div> <div>Microsoft Office</div> <div>● ● ● ● ●</div> </div> <div> <div>HTML/CSS</div> <div>● ● ●</div> </div>	<div> <div> Principal Mechanical Engineer </div> <div> <ul style="list-style-type: none"> Project management of two space R&D projects for the Luxembourg Government and mentoring junior staff. Development of in-space CFRP pultrusion mechanism Development of geolocation techniques including TDoA and FDoA to combat illegal shipping and piracy. </div> <div> Space R&D 09/18 – 11/20 Luxembourg </div> </div>	
	<div> <div> Design Manager </div> <div> <ul style="list-style-type: none"> Concept design of automation systems for robotic welding, materials handling, and assembly for customer approval. Design of a fully automated manufacturing suite including material storage and retrieval, laser cutting, bending and welding. Design of robotic welding and machining systems. </div> <div> Automation 06/17 – 09/18 Manchester </div> </div>	
<h2>Analysis</h2>	<div> <div> Space Engineer (contract) – OIP Sensor Systems </div> <div> <ul style="list-style-type: none"> Design of high precision space optical assemblies and test equipment for PROBA satellites. Modal, Quasi-Static and Dynamic thermal analysis. Vibration testing and analysis of optical assemblies. </div> <div> Space Optics 06/16 – 04/17 Oudenaarde Belgium </div> </div>	
<div> <div>Modal</div> <div>● ● ● ● ●</div> </div> <div> <div>Vibration</div> <div>● ● ● ● ●</div> </div> <div> <div>Stress</div> <div>● ● ● ● ●</div> </div> <div> <div>Thermal (Static)</div> <div>● ● ● ● ●</div> </div> <div> <div>Thermal (Dynamic)</div> <div>● ● ●</div> </div>	<div> <div> Mechanical Design Engineer (contract) - EDM </div> <div> <ul style="list-style-type: none"> Mechanical Design and Analysis of 5-axis F35 flight simulator which achieved an innovation award. Visualisation renderings for customer. </div> <div> Flight Simulators 02/16 – 06/16 Manchester </div> </div>	

Education		Project Engineer (contract) – Didsbury Engineering	Mechanical Eng.
Mechatronics	Diploma	<ul style="list-style-type: none"> Mechanical design and stress analysis of weapons handling systems used on ground and on aircraft carriers 	02/15 – 12/15 Cheshire
Cognitive Robotics	Diploma	Systems Manager/ mechanism specialist (contract) – KDA	Space mechanism
Accounting	RSA 2	<ul style="list-style-type: none"> Technical authority for the space flight qualification of Solar Array Drive Mechanisms used on Copernicus, Solar Orbiter & Exo-Mars scientific spacecraft. 	01/11 – 12/14 Kongsberg Norway
Computer Assisted Manuf	HNC	<ul style="list-style-type: none"> Vibration/ Shock specialist. Design of fixtures. Test/ analysis. Participation in PDR, CDR, TRR, PTR & FRR with ESA/Prime Generation of technical documents to ECSS standard. 	
Mech & Prod'n Engineering	HNC	Mechanical Design Engineer (contract) – General Vacuum	Vacuum Chambers
Courses		<ul style="list-style-type: none"> Design of large vacuum chambers used for the application of a very thin layer of Aluminium or Aluminium Oxide to plastic film for food packaging and fire-retardant clothing 	04/10 – 12/10 Manchester
Modern Project Management		Mechanical Design Engineer (contract) – 360 Vision	Cameras
Business Law (AAT)		<ul style="list-style-type: none"> Design of CCTV camera housings including for use in Hazardous and explosive environments using Pro/E surfacing. 	01/10 – 03/12 Runcorn/ Home
International Trade & Payments (IoE)		Mechanical Design Engineer (contract) – RTS	Robotics
International Physical Distribution (IoE)		<ul style="list-style-type: none"> Design of Laboratory Robots used for the handling of blood saliva and DNA, with storage and retrieval at -20 or -80°C 	05/09 – 12/09 Manchester
Ferranti Technician Apprenticeship		Mechanical Design Engineer (contract) – Magna Powertrain	Engines
Soo Bahk Do 2 nd Dan Black Belt		<ul style="list-style-type: none"> Conceptual design of a unique 2-stroke horizontally opposed 5-cylinder diesel aircraft engine with twin wobble plates. Analysis of highly stressed engine components. 	02/08 – 05/09 St Valentin Austria
Languages		Managing Director – Valencia Bathrooms	Retail
English	Native	<ul style="list-style-type: none"> General management of a busy bathroom showroom Including customer sales, interior design, purchasing, installation management, accounts and project management 	05/07 – 2010 Manchester
French	Intermediate	Mechanical Design Engineer (contract) – McCormick Tractors	Agriculture
Mandarin Chinese	Spoken	<ul style="list-style-type: none"> Integration of new diesel engines into the existing tractor range to meet updated emissions requirements. 	12-06 – 05/07 Doncaster
Spanish	Basic	Mechanical Design Engineer (contract) – MAN	Engines
		<ul style="list-style-type: none"> Adaptation of RK270 Marine Diesel Engines for the Chinese Coastguard, working alongside a team of Engineers from Dalian Employment and management of a team of 7 contractors converting imperial drawings to metric, including submission of accounts. 	01/06 – 10/06 Manchester
		Mechanical Design Engineer (contract) – RTS	Robotics
		<ul style="list-style-type: none"> Design of bespoke laboratory robots used to separate and store DNA from blood samples using centrifuges and cameras. 	10/05 – 01/06 Manchester
		Mechanical Design Engineer (contract) – MAN	Engines
		<ul style="list-style-type: none"> Design of various components and sub-assemblies including Castings, machined components, exhaust ducting and pipe-runs for the companies RK270 marine and power generation engines. 	09/04 – 10/05 Manchester
		Achievements	
		<ul style="list-style-type: none"> Achieved the first Space-Flight qualification in 10-years for KDA (Norway) Helped win an innovation award for a 5-axis flight simulator for the RAF Reduced the design to finished product times by over 200% at Philips through the introduction and integration of Pro/Engineer and Pro/NC, with training of staff. Wrote a program in Pro/Program to automate the design of waveguide assemblies and automatically generate 2D detail drawings in Pro/Engineer Modularised the HPA assemblies at Siemens, reducing design time by over 100%. 	