






<b>Personal details</b>	<b>Nicholas Baker</b>	
<div>  Nickbaker64@yahoo.com </div> <div>  <a href="https://www.linkedin.com/in/nick-baker-58390b214">Linkedin.com/in/nick-baker-58390b214</a> </div> <div>  Wilmslow, Cheshire, UK </div> <div>  +44 (0)7719268619 </div> <div>  <a href="http://www.3sigmadesigns.co.uk">www.3sigmadesigns.co.uk</a> </div>	<b>Senior Mechanical Design/ Space Systems Engineer</b>	
	<b>Profile</b>	
<div> <div>Mechanical Eng.</div> <div>Systems Engineering</div> <div>3D CAD</div> <div>Shock/ Vibration</div> <div>RF principals</div> <div>Analysis</div> <div>ECSS Document</div> <div>Hydraulics</div> <div>EMC</div> </div> <div> <div>●●●●●</div> <div>●●●●●</div> <div>●●●●●</div> <div>●●●●●</div> <div>●●●</div> <div>●●●●●</div> <div>●●●●●</div> <div>●●●●●</div> <div>●●●●●</div> </div>	<b>Experience:</b> Practical experience of R&D; Initial Concept; Presentation and Sales material; Technical Documentation; Mechanical and Electro/ mechanical Design, Analysis; Sub-Contract and Customer liaison; Assembly; Test; Installation; Final handover. <b>Capability:</b> Working in the space industry requires a fundamental understanding of why decisions are made during the design process, from material choice through to fastener torques, and the behaviour of components and assemblies under severe external loading. <b>Knowledge:</b> Precision machining; Steel fabrication; Plastics; CFRP; EMC; RF; Thermal cycling; Severe Vibration; Corrosive environments; DFA; DFM; GDT. <b>Adaptability:</b> Worked and lived in 8 countries across Europe on projects ranging from large welded structures to spacecraft, and from bespoke robotics to aircraft engines.	
	<b>Mechanical Design Engineer (contract) - INEOS</b> <ul style="list-style-type: none"> <li>Manufacturing support – design of various jigs and fixtures for welding, laser welding and material handling.</li> <li>Modal, stress, thermal (dynamic and static) analysis.</li> </ul>	
	<b>Mechanical Design Engineer (contract) - Ashtead Technology.</b> <ul style="list-style-type: none"> <li>Mechanical &amp; Hydraulic design &amp; stress analysis of heavy sub-sea lifting equipment for underwater recovery operations.</li> </ul>	
	<b>Principal Mechanical Engineer/ Deputy CTO - MRT Ltd.</b> <ul style="list-style-type: none"> <li>Mechanical &amp; Mechatronic design of a fully autonomous self-charging robot that 'lives' on the side of a ship hull. Gearbox design, Vac Forming, Water ingress prevention, Motor specification, Cost management; Purchasing; Presentation renderings, Technical Documentation.</li> </ul>	
<b>Main Industry Exp.</b> <div> <div>Space</div> <div>Robotics</div> <div>Automation</div> <div>Engine design</div> <div>Satellite Communications</div> </div>	<b>Robotics</b> 01/23 – 06/23 Home/ Malta	
	<b>Mechanical Design Engineer (contract) – 3-Sigma Designs</b> <ul style="list-style-type: none"> <li>Conceptual design of sub-sea robot for MRT Ltd.</li> <li>Design of a modular suite of hospital storage solutions, a high-end injection moulded personal sanitary disposal unit and stackable food display trays.</li> </ul>	
	<b>Principal Mechanical Engineer/ Project Manager</b> <ul style="list-style-type: none"> <li>Project management of two space R&amp;D projects for the Luxembourg Government, being: In-space CFRP manufacturing; Geolocation (RF) principals such as TDoA using a single satellite.</li> <li>Mentoring of junior staff in space and mechanical engineering.</li> <li>Company representation in front of ESA and the Luxembourg Government with weekly project reports and GANTT chart update.</li> </ul>	
	<b>Design Manager – Adelphi Automation</b> <ul style="list-style-type: none"> <li>Conceptual design of automation systems for robotic welding, materials handling, and assembly for customer approval.</li> <li>Design of a fully automated manufacturing suite including material storage and retrieval, laser cutting, bending and welding.</li> <li>Management and mentoring of design office staff.</li> </ul>	
	<b>Space Engineer (contract) – OIP Sensor Systems</b> <ul style="list-style-type: none"> <li>High precision space optical assemblies for spacecraft, combining near and far infra-red with visual spectrum cameras.</li> <li>Modal, Quasi-Static and Dynamic thermal analysis.</li> <li>Vibration testing and vibration analysis of optical assemblies, with test procedure and report generation.</li> </ul>	
<b>Analysis</b> <div> <div>Modal</div> <div>Vibration</div> <div>Stress</div> <div>Thermal (Static)</div> <div>Thermal (Dynamic)</div> </div> <div> <div>●●●●●</div> <div>●●●●●</div> <div>●●●●●</div> <div>●●●●●</div> <div>●●●●●</div> </div>	<b>Mechanical Design Engineer (contract) - EDM</b> <ul style="list-style-type: none"> <li>Mechanical Design and Analysis of a 5-axis flight simulator which achieved an innovation award.</li> <li>Visualisation renderings for customer presentation.</li> <li>Stress analysis of the yaw platform.</li> </ul>	
	<b>Space Optics</b> 06/16 – 04/17 Oudenaarde Belgium	
	<b>Flight Simulators</b> 02/16 – 06/16 Manchester	

<b>Education</b>		<b>Project Engineer (contract) – Didsbury Engineering</b> <ul style="list-style-type: none"><li>Mechanical design and stress analysis of weapons handling systems used on ground and on aircraft carriers</li></ul>	<b>Mechanical Eng.</b> 02/15 – 12/15 Cheshire
Mechatronics	Diploma	<b>Systems Manager (contract) – KDA</b> <ul style="list-style-type: none"><li>Technical authority for the space flight qualification of Solar Array Drive Mechanisms used on spacecraft currently orbiting the Earth, Mars and the Sun including generation of documents including Design Description, VCD and Test procedure and report.</li><li>Technical responsible for all engineering activities including Mechanical, Electrical, Analysis, Assembly and Test with mentoring of staff and decision making. Vibration specialist.</li><li>Company representation in meetings with the Prime and ESA.</li></ul>	<b>Space mechanism</b> 01/11 – 01/14 Kongsberg Norway
Cognitive Robotics	Diploma		
Accounting	RSA 2		
Computer Assisted Manuf	HNC		
Mech & Prod'n Engineering	HNC		
<b>Courses</b>		<b>Mechanical Design Engineer (contract) – General Vacuum</b> <ul style="list-style-type: none"><li>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.</li></ul>	<b>Vacuum Chambers</b> 04/10 – 12/10 Manchester
Modern Project Management		<b>Mechanical Design Engineer (contract) – 360 Vision</b> <ul style="list-style-type: none"><li>Design of CCTV camera housings including for use in Hazardous and explosive environments using Pro/E surfacing.</li></ul>	<b>Cameras</b> 01/10 – 03/12 Runcorn/ Home
Business Law (AAT)			
International Trade & Payments (IoE)		<b>Mechanical Design Engineer (contract) – RTS</b> <ul style="list-style-type: none"><li>Development of Laboratory Robots used for the handling of Blood, saliva and DNA, with storage and retrieval at -20 or -80°C</li></ul>	<b>Robotics</b> 05/09 – 12/09 Manchester
International Physical Distribution (IoE)			
Ferranti Technician Apprenticeship		<b>Mechanical Design Engineer (contract) – Magna Powertrain</b> <ul style="list-style-type: none"><li>Conceptual design of a unique 2-stroke horizontally opposed 5-cylinder diesel aircraft engine with twin wobble plates.</li><li>Analysis of highly stressed engine components.</li></ul>	<b>Engines</b> 02/08 – 05/09 St Valentin Austria
Soo Bahk Do 2 <sup>nd</sup> Dan Black Belt			
<b>Languages</b>		<b>Managing Director – Valencia Bathrooms</b> <ul style="list-style-type: none"><li>General management of a busy bathroom showroom Including customer sales, interior design, purchasing, installation management, accounts and project management</li></ul>	<b>Retail</b> 05/07 – 2010 Manchester
English	Native	<b>Mechanical Design Engineer (contract) – McCormick Tractors</b> <ul style="list-style-type: none"><li>Integration of new diesel engines into the existing tractor range to meet updated emissions requirements.</li></ul>	<b>Agriculture</b> 12-06 – 05/07 Doncaster
French	Intermediate		
Mandarin Chinese	Spoken	<b>Mechanical Design Engineer (contract) – MAN</b> <ul style="list-style-type: none"><li>Adaptation of RK270 Marine Diesel Engines for the Chinese Coastguard, working alongside a team of Engineers from Dalian</li><li>Employment and management of a team of 7 contractors converting imperial drawings to metric, including generation and submission of accounts.</li></ul>	<b>Engines</b> 01/06 – 10/06 Manchester
Spanish	Basic		
		<b>Mechanical Design Engineer (contract) – RTS</b> <ul style="list-style-type: none"><li>Design of bespoke laboratory robots used to separate and store DNA from blood samples using centrifuges and cameras.</li></ul>	<b>Robotics</b> 10/05 – 01/06 Manchester
		<b>Mechanical Design Engineer (contract) – MAN</b> <ul style="list-style-type: none"><li>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.</li></ul>	<b>Engines</b> 09/04 – 10/05 Manchester
<b>Achievements</b>			
<ul style="list-style-type: none"><li>Achieved the first Space-Flight qualification in 10-years for KDA (Norway).</li><li>Helped win an innovation award for a 5-axis flight simulator for the RAF.</li><li>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.</li><li>Wrote a program in Pro/Program to automate the design of waveguide assemblies and automatically generate 2D detail drawings in Pro/Engineer.</li><li>Modularised the HPA assemblies at Siemens, reducing design time by over 100%.</li><li>Assisted in the purchase and renovation of a property in Spain, including legal attendance and raw material purchasing conducted in Spanish.</li></ul>			