# Kinkit Wong

Design Portfolio : **http://2kdesigns.co.uk/**

## Key Achievements

### BOSCH Professional Lawn & Garden

**Handle System Design -** Designed a multitude of handle adjustment mechanisms and studied patents to ensure IP safety. Created working prototypes, tested with users and against ISO standards. Presented the final prototype to the entire department.

**Design Engineer** - Created tolerance stack-ups for complex assemblies for new products during the early design stages. Created professional working drawings, given to external companies for manufacture of bespoke components. Assembled early prototypes and carried out ISO standard tests.

**Chief Test Engineer** - Created test procedures for a new product with respect to standards. Managed test engineers and carried out all tests comfortably within deadlines. Wrote formal test result documents and ideated solutions to solve problems that arose from tests.


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## University Projects

### Final Year Specialist Design Project - TBD

**Brief** - Design and create an autonomous pavement cleaner that can effectively remove particulate matter and dried gum.

A nine month individual project to design and create a proof of principle prototype of an autonomous pavement cleaner. Two literature reviews were performed to explore the design space, these being a technology audit into autonomous systems and an in-depth study into the needs of stakeholders and existing competitor products. These studies informed the design process and focused the brief into solving the issue of excess particulate matter and dried gum; causes of adverse health conditions and antisocial behaviour. Initial concepts were evaluated and mechanisms of which prototyped in order to test functionality. Detailed cardboard models were manufactured, informing geometric values for the CAD. Following this, an autonomous proof of principle prototype was created.

Using 4 DC motors controlled by an Arduino, a working omnidirectional drivetrain was created for enhances positional accuracy, required for traversing a narrow pavement. Reliable machine vision code for gum detection was developed through Python OpenCV via a JeVois camera. Centre coordinated were sent serially from the camera to the Arduino and used to move a lateral gantry which positioned the gum removal spray. System autonomy code was created on MATLAB Simulink. A working autonomous gum detection and cleaning system was created that could traverse in a line while detecting and reacting accordingly to gum within its path. The system was tested in controlled and uncontrolled environments. The final design accounted for errors seen during testing.

### Group Business Design Project - 70%

**Brief** - Design an electric wheelchair for pre school children (14months - 5 years old) in developing countries. The product should be low cost, affordable and culturally appropriate, coupled with a suitable business and distribution strategy.

Project was associated to accessibility design company, ‘designability’. Product manager in a team of six. Oversaw the design of the product and maintained a coherent design aim throughout. Created a design specification, which drew information from British Standards and market research (both primary and secondary), in order to maintain focus on solving the design brief. Organised and participated in many unique idea generation activities such as ‘Tiered Mind Map’ and ‘BBB Brain Sketching’.

Was CAD lead during development and created a majority of the components and all assemblies on CAD (Autodesk Inventor Professional 2018). Effective use of ’global’ parametric modelling, assembly representations, animation and rendering. Organised market testing at local nurseries. Created low fidelity prototypes for the tests, gaining a deeper understanding of market requirements. Studies ergonomic data to ensure components fit the majority of children.

## Languages

**English** (Native Language) | **Mandarin** (Conversational) | **Cantonese** (Conversational)

| Integrated Design Engineering<br>University of Bath<br>2014—2019 | A Level<br>Hampton School<br>2012—2014 | GCSE<br>Hampton School<br>2009—2012 |
|---|---|---|
| Current Average: **71.1%**<br>User Centred Design : 73%<br>Mechatronic Design I : 74%<br>Product Design & Dev. : 77%<br>Solid Mechanics 4 : 79%<br>Fluid Dynamics : 89%<br>Business Processes : 74% | **A* (2)**<br>Maths, Physics<br>**A (1), B (1)**<br>DT (Resistant Materials), Further Maths | **A* (6)**<br>Maths, DT, Physics, Chemistry, Biology, Mandarin<br>**A (4)**<br>French, English Literature, English Language, History |

## Internships

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| **BOSCH**<br>Stowmarket<br>2017, 1 Year<br>Paid | Year long placement with 'BOSCH Professional Lawn and Garden'. Aided in both testing and creating test procedures from standards for a wide variety of gardening tools. Designed improvements to the current line of professional tools using CAD (PTC Creo Parametric) and prototyping. Involvement in the early concept and prototyping stage of many products. |
| **Nice Agency**<br>London<br>2011, 2 Week<br>Unpaid | Created a company Christmas app that could be distributed as a marketing tool.<br>Designed and storyboarded the app through Photoshop and Illustrator, ensuring its design matched the company's aesthetics. Presented my idea to the CEO of the company. |
| **UBS**<br>London<br>2010, 1 Week<br>Expenses paid | Coded visual display of stock progression for customers on 'Visual Studio'. Close communication with managers and constant feedback used to improve the design. Final design presented to the CEO at the end of the week. |

## Employment

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| **ODEON**<br>Esher<br>2014, 2 Months | Cleaned facilities, manned tills and restocked shelves. Excelled in customer service with most sales of 'combo deals' and loyalty cards. Many personal positive customer reviews online. Resulted in winning the employee of the month award. |
| **Tossed**<br>Cobham<br>2015, 1 Months | Made food such as salads and wraps according to precise instructions given by the company as well as upholding the jovial nature they portray. Excelled in speed and customer service, resulting in an employee of the month award. |

## Extra Curricular Activities

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| **Film Prop Manufacture**<br>2018 | Created a personalised home assistant film prop for a short film. Constant contact with client, understanding their needs. Created a prop which consisted of 3D printed and laser cut components encasing a mini Arduino which controlled a LED lighting system within. |
| **Hip Hop/Break Dancing**<br>2014 — Present | Started dancing at university as part of a society. Have been on the committee for 3 years, 'Urban Leader', 'Urban Vice Leader' and 'Chairman'. Increased the society's membership and entered them into their first Hip Hop competition. Choreographed many award winning pieces; 1st place novice hip hop and 2nd place trios at the UCL transcendence competition. |
| **Tennis**<br>2011— Present | Played tennis since the age of 16 and have completed the level one tennis leadership course, thus am qualified to assistant coach under 9s. |