Justin **Kek**

MECHANICAL ENGINEERING | IMPERIAL COLLEGE

London, United Kingdom

justinkek.com

Experience

07/21 - Present **External Data Consultant - Oxford City Council**
- Designing the movement, storage, transformation and aggregation of data from four existing data streams.
- Extracting data from 11 different sources with Python scripts and Azure Automation runbooks.
- Creating a PostgreSQL database to load data and enabling analytics and aggregation with Tableau.

07/20 - 09/20 **Research & Development Intern - Sentec Limited (Xylem Subsidiary)**
- Responsible for the complete design of a novel end consumer product (NDA signed).
- Developed 120 different ideas and 12 prototypes over the span of three weeks in a team of six.
- Produced two working demonstrators to showcase technological methodology, one of which was selected for patenting due to commercial viability.
- Drafted initial patent application covering alternative methods and applications of the technology.

01/20 - 12/20 **Project Manager - T2Diary**
- Led a team of four to develop a mobile application for Type 2 Diabetics.
- Created user interface with Figma and devised features and functions through continuous engagement with diabetics, nurses and doctors.
- Technical development of app features, animations and user interface using Flutter (Dart) for Android and iOS platforms.

10/20 - 06/21 **Solo Developer - Machine Learning Algorithms for Intra-Day Trading**
- Developed a Python algorithm to automate a trading pipeline with IBKR API.
- Designed a proprietary data manager to retrieve, organise and clean high frequency data.
- Analysed performance of different time series forecasting methods including ES and ARIMA.

10/15 - 08/17 **Lieutenant – Singapore Armed Forces**
- Company 2nd in Charge (Lieutenant) – 924th Singapore Infantry Regiment.
  - Bonded a company of 145 individuals for the next 10 years by conducting military exercises and training.
- Force Commander (2nd Lieutenant) – 8th Singapore Infantry Regiment.
  - Orchestrated operations for over 90 troopers located across the country in collaboration with various bases.
- Sword of Merit (Officer Cadet) – Officer Cadet School.
  - Commissioned within top 5% of cohort as judged by performance in military exercises and tests, alongside commander and peer assessments.

| 10/20 - 03/21 | **Metal Forming Researcher - Process Design for Sheet Metal Stamping** |

- Investigated the optimisation of stamped components on MATLAB and AutoForm in a team of four.
- Modeled viscoelastic flow with constitutive equations to generate material properties for simulating forming process.
- Optimised hot stamping process to minimise surface defects on an aluminium alloy component by adjusting forming speed and forces.
- Enhanced post-form strength and geometrical accuracy with heating and quenching.

| 01/21 - 03/21 | **Project Manager - Automated Production of Wind Turbine Turntables** |

- Developed a manufacturing plan to automate the production of large steel wind turbine turntables.
- Engineered a floor and process plan, and determined manufacturing lead times for costing and scheduling.

| 10/18 - 06/20 | **Project Manager – Vehicle Control & In-Hub Motor for Formula Student** |

- Delegated tasks to a team of six to create power delivery, telemetry and control schematics with KiCAD for FSUK 2019.
- Designed uprights and hub shafts on SolidWorks for manufacturing an outboard tractive system in a separate team of four for FSUK 2020.
- Planned strength, electrical and corrosion testing to ensure optimal performance.

| 10/19 - 12/19 | **Software Developer – Explosive Ordinance Disposal Robot** |

- Developed Embedded C algorithm on MPLAB for an autonomous robot purposed for ordinance disposal in a team of two.
- Tackled navigation, mapping, and information retrieval using radio-frequency and infrared.

Education

| 09/17 – 06/21 | **Master's in Mechanical Engineering – Imperial College London** |

- Graduated - Grade: Upper Second Class Honours (69.31%)
- Core modules: Metal Processing Technology, Manufacturing Technology & Management, Interfacing & Data Processing, Heat Transfer.
- Other modules: Corporate Finance, Design Art & Creativity, Business Economics.

| 03/12 - 05/15 | **Diploma in Mechanical Engineering and Business – Ngee Ann Polytechnic (Singapore)** |

- Graduated as Valedictorian and awarded Lim Teck Lee Gold Medal & Prize.
- Grade: 3.93/4.00
- Key Modules: Industrial Automation, Engineering Design Process, Marketing Fundamentals, Idea Launchpad, Effective Negotiation

Others

| Languages & Frameworks | |

- Proficient: Python, Dart (Flutter), SQL (PostgreSQL).
- Prior experience: MATLAB, C.