

Yuan Chuan Kee

Scientist-Engineer

Summary

A scientist-engineer who is interested in technology that transforms how we work, live and play.

Experience

Data Engineer at Tech in Asia

February 2016 - Present

Reducing entropy at Tech in Asia. From zero to one.

As the first data engineer, I have been working on data strategies, data infrastructure and instrumentation, topic model, information hierarchies to develop a cohesive view across all Tech in Asia products.

Analytics Manager at SP Group

August 2015 - February 2016 (7 months)

As the first analytics hire in SP, I managed the Data Analytics Resource Lab that is established under SP Engineering Board to support the Data Analytics initiatives.

- Engaged various business and engineering units to understand their operations, business problems and the available data and proposed various analytics solution such as propensity modelling and geospatial analysis
- Completed a Proof-of-Value project that employed geospatial analytical techniques (based on PostgreSQL/PostGIS and Tableau) for the Gas Condition Monitoring Team to develop spatial and statistical metrics to establish objective evaluation of operational incidents to optimise maintenance regime
- Proposed the modernisation of data infrastructure, data governance and modern BI software training frameworks for working committee in view of advancing towards data-driven decision making processes and self-service analytics

Consultant (Big Data and Analytics) at IBM

September 2013 - August 2015 (2 years)

Business Analytics & Strategy Consultant in Global Business Services

Big Data and Analytics Consultant

Our team designed and deployed an on-premise, bare metal, Hive-based data warehouse solution based on IBM BigInsights (IBM's Hadoop distribution) and InfoSphere Streams for one of the largest telcos in the Asia Pacific region

- Set up the clusters and optimised the kernel, network and disk performance for Hadoop
- Streamed and processed up to 12.5 TBs (uncompressed) of mobile network data daily into the Hadoop cluster as Parquet format

- Analysed the data and develop use cases for the client's consumer and marketing teams to leverage the data for behavioural insights

Provided pre-sales support for a telco client to design a Hadoop solution (based on IBM Hadoop distribution) to replace their Teradata's solution which will increase the data processing throughput by more than 50% with no changes required to existing SQL scripts and significant cost saving even as data scales

Provided account support for one of the largest retail clients in Singapore to understand their data availability and enablement of analytics use cases

Business Analyst

- Engaged the business users of a government-chartered organisation to understand the business processes and functions of a finance system
- Delivered the functional requirements for one of the most complex processes involving the computation of payout sum to the beneficiaries and the form of payment based on the business rules and regulations

Research Assistant at National Cancer Centre Singapore

June 2012 - May 2013 (1 year)

Recruitment of breast cancer patients into a study on chemotherapy-induced cognitive impairment to investigate the prevalence and severity of cognitive impairment resulting from chemotherapy regimen in Asian population.

Administered an objective neuropsychology battery Headminder™ and various quality of life and cognitive-related surveys (FACTCog and Beck Anxiety Inventory) with patients.

Performed statistical analysis of results, with SPSS Statistics, to study the patients' cognitive performance (memory, response and mental agility) and their health during the course of chemotherapy

Research Engineer at National University of Singapore

January 2012 - May 2012 (5 months)

GSK-EDB Trust Fund Project on Understanding, Screening And Optimizing Single-Step Crystallization And Granulation Of API By Emulsion-Based Processing - A Combined Microfluidics And Multi-Scale Modeling Approach

Studied the mechanism of functionalised silica nanoparticles on crystal polymorphism in emulsion-based evaporative crystallisation

Data Visualisation Scientist at Genome Institute of Singapore

August 2011 - November 2011 (4 months)

Synthesised novel visualisations to visualise patterns and relationships (mutations, SNP, copy number variations, etc) from cancer genome using Circos

Developed a wrapper module, in Perl, that streamlines the analytical pipelines; available on open-source; provide tutorials and guides to assist users to install and utilise the software.

Volunteer Research Assistant at National University of Singapore

January 2011 - July 2011 (7 months)

An independent research project on an in vitro fertilisation biomedical device.

Developed an agent-based simulation algorithm in MATLAB to study the movement of active swimming organisms in confined geometries

Utilised the simulation to study in silico spermatozoa movement through a "device" with increasing resistance for a microfluidic in vitro fertilisation application

Also involved in the fabrication of the actual physical microfluidic device for experimental works

Technical Service Engineering Intern at Merck

January 2010 - June 2010 (6 months)

Involved in the API Cleaning Improvement Project at Tuas West Facility

- Verified the Cleaning Boundaries of equipment trains of multi-products facilities
- Line verifications on Product-Contact equipment
- Preparation of Installation Qualification protocols
- Performed verification on ISO drawings and material certifications provided by contractors
- Determination of new surface areas of modified facilities for MRAL calculations
- HAZOP study on modified equipment

Research Intern

May 2009 - August 2009 (4 months)

Involved in the study of synthesising novel caged-bell structure Platinum-based noble metal nanoparticles for modern fuel cell applications

Involved in the operations of the 1st Nanos Today Conference held in Biopolis

Research Intern

November 2006 - February 2007 (4 months)

Screening of chemical substrates for dry proline-catalysed aldol condensation.

Education

National University of Singapore

Bachelor of Engineering (B.Eng.), Chemical and Biomolecular Engineering, 2007 - 2011

Activities and Societies: Team member of the NUS INSPIRE student organisation that organised a 3-day intensive workshop, for pre-university students to learn about research and entrepreneurship in fields of pharmaceutical science and engineering.

Pioneer Junior College

GCE 'A' Levels, Triple Science, 2003 - 2004

Honors and Awards

Final Year Project, 1st Prize in Chemical and Biological System Engineering, Academic Achievement Award, Principal's List, 3rd Prize (Open Category) for Changi Airport Hackathon

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[Contact Yuan Chuan on LinkedIn](#)