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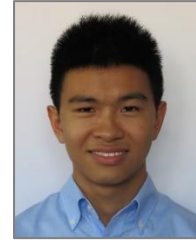Email: kailun@u.nus.edu
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Personal Statement

I have been fascinated by the story of Abraham Wald, one of the fathers of Operations Research/ Industrial Engineering. As a WW2 Statistician, Wald analyzed bomber losses based on the bullet holes of returning planes. His unique insight was to adjust his data for survivorship bias and recommending that the least damaged sections (engines) of returning bombers should be reinforced instead of the bullet-ridden fuselage. His vision likely saved countless lives and helped bring WW2 to a close.

This anecdote impressed upon me the huge impact that good data analytics can have, to the extent of determining life and death, and inspired me to explore the field of data science. Simultaneously, Wald's experiences also emphasized the importance of careful data interpretation, and to thoroughly understand ground truths in the real world before drawing conclusions. Similarly, I use data to develop unique insights and communicate them effectively to create tangible value and make a positive impact.

Internship Objectives
I look forward to contributing on a wide spectrum of responsibilities and work on a broad range of challenging problems. I hope to drive the growth of a rapidly expanding start-up, in both technical and business domains. Through this internship, I wish to advance my technical skills and data science knowledge and experience what it takes to successfully build and scale a start-up.

Work Experience
I have experience working with data in organizations across different industries. My most recent stint was with Maybank Kim Eng (MKE), a local stockbroking firm looking to adopt data-driven investing in their research process. During a hackathon organized by MKE, my team pitched an idea to select stocks using factors (e.g. company size, value, momentum etc.) which are correlated to long-term stock returns and risks. This was combined with a portfolio optimization tool that automatically recommended stock portfolios based on clients' risk and return preferences. We were placed 2nd for the competition, and I implemented the model for MKE in my subsequent winter break.

Prior to MKE, I worked with StashAway, a rapidly expanding digital investment advisor in South East Asia. As a client engagement intern, I was involved in customer acquisition by introducing StashAway's platform to prospective clients. I also exercised my communication skills under pressure during a 4-month period of volatile market conditions. By patiently addressing clients' concerns on investment performance, I contributed to maintaining a high level of customer satisfaction and minimizing customer churn. Beyond my primary responsibilities, I developed a dashboard for tracking client engagement KPIs and common customer queries. The dashboard provided useful feedback for client engagement operations and helped advise business and product decisions.

How I Can Contribute
I have experience with data manipulation, analysis, visualization and predictive modelling. I can use these skillsets to develop unique insights and relate them to overall business objectives. Having worked with data in organizations across multiple industries (finance, customer service, military), I am adaptable to problem-solving in different business contexts. I am also working on Andrew Ng's Machine Learning Course on Coursera and hope to apply a wider range of data science techniques to generate tangible impact.

Beyond technical skills, I am a patient and persuasive communicator who can work closely with key stakeholders towards meeting business objectives. With a client-centric and proactive attitude, I also work towards understanding client needs and can develop innovative solutions that translate into business value.

Education

Aug 2018 – Present	**National University of Singapore (NUS)**	Singapore
	- Bachelor of Engineering (Honors) in Industrial and Systems Engineering *(Course details in Appendix A)* - Accelerated 3-year Global Engineering Program	
Jan 2010 - Dec 2015	**Hwa Chong Institution**	Singapore
	- Singapore-Cambridge General Certificate of Education Advanced Level 7 Distinctions	

Work Experience

Dec 2018 - Present	**Maybank Kim Eng Research**	Singapore
	Data Science Intern	

- Maybank Kim Eng (MKE) is a stockbroking firm, adopting data science to enhance their research services.
- Spearheading MKE's thrust towards data-driven investing.
- Developed from scratch a multifactor model, which analyses financial data for the selection of publicly-listed equities in Singapore.
- Using robust regression methods to ensure the reliability of outputs and forecasts.
- Built a portfolio optimization tool that recommends equity portfolios using constrained Mean-Variance Optimization (MVO).
- Backtested returns outperformed the index by ~20% on a risk-adjusted basis.

Feb 2018 - May 2018	**StashAway**	Singapore
	Client Engagement Intern	

- StashAway is the leading digital investment advisor in Singapore and Malaysia.
- Introduced StashAway's investment platform to clients and prospective customers.
- Patiently addressed clients' concerns on investment performance throughout a 4-month market correction, encouraging customers to adopt a long-term perspective and invest consistently.
- Built dashboards that aggregate and analyze client engagement data to provide actionable insights on common concerns/queries and client satisfaction trends.

Jan 2016 – Jan 2018	**Singapore Armed Forces (National Service)**	Singapore
	Finance Assistant	

- Developed a series of dashboards using a combination of Excel tools to aggregate data from Enterprise Systems and SAP Ariba Procurement Systems to track ~900 transactions across the Division worth ~$1M / yr.
- By automating data analysis, the dashboards provide key stakeholders with a clearer picture of fund expenditures, helping the unit to make more informed decisions on unit expenses.
- Advised event organizing teams on organizational finance policies and worked closely with them to secure funding for Division events.
- Responsible for writing and vetting of papers seeking funding for Division events.
- Led a team of Finance Assistants to spearhead Risk and Internal Control Compliance Checks.

Scholastic Achievements/Extracurricular Activities

Aug 2018 - Present	**Scholarship**	Singapore
	NUS Global Merit Scholarship	

Sep 2018	**Singapore Airlines App Challenge 2018**	Singapore

Grand Prize
- Developed solutions to tackle two business challenges – (1) Tracking F&B wastage, (2) Tracking movement of catering inventory
- Developed a holistic tracking system that automates the process of collecting and analyzing inventory and F&B wastage data.
- Solutions help managers to monitor inventory data across multiple global destinations and manage the airline's in-flight catering operations with greater speed and accuracy.
- Customized solutions tailored to SIA's business needs, integrating seamlessly with existing systems and workflows.

Sep 2018	**Maybank Kim Eng Hackfest**	Singapore

1st Runners-up
- Proposed a framework for data-driven investing and portfolio construction, targeted at retail investors.
- A two-part solution involving an (1) Alpha Factors Analyzer and (2) Portfolio Optimizer.
- (1) Alpha Factors Analyzer:
  - Using common Alpha Factors (e.g. size, value, momentum etc.) to classify stocks, and provide investors with an intuitive visual representation of stock characteristics at a glance.
- (2) Portfolio Optimizer:
  - Provides investors with an intuitive visualization of portfolio characteristics. The tool also uses Mean-Variance Optimization (MVO) to automatically allocate portfolios given user constraints on expected return, risk and sector/factor exposures.

Jan 2010 – Dec 2015	**Hwa Chong Institution**	Singapore

- Outstanding Student Award/ Hwa Chong Diploma (Distinction)
- Co-Chairperson, 7th International Science Youth Forum[1]

Skill Sets & Proficiency

Programming	Python	Proficient
	C++/ C	Intermediate
	VBA	Basic
Data Analysis/ Visualization	Pandas/ NumPy	Intermediate
	Sklearn/ Statsmodels	Intermediate
	Matplotlib	Intermediate
	Tableau	Intermediate
	Microsoft Excel	Proficient
	Predictive Modelling/Machine Learning	Basic
Database	MySQL DBMS	Intermediate
GUI Design	PyQt5	Basic
Markup/ Data Interchange	XML	Basic
	JSON	Basic
Web Design	HTML, CSS	Basic
	PHP	Basic
Multimedia	Adobe Photoshop CC	Basic
	Adobe Premiere Pro	Basic
Non-technical Skills	Project Management	Intermediate
	Writing/Publications	Intermediate

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[1] Led a team of 39 students to organize a week-long international conference, attended by 109 international delegates and 6 Nobel Laureates.

Degree: Bachelor of Engineering (Honors) in Industrial and Systems Engineering
Cumulative Average Point: 4.80 / 5.00

Year	Level	Course Description	Grades
Jan – May 2015	Advanced Placement	Modern Physics	A-
Jan – Jun 2018	Advanced Placement	Programming Methodology I (Python)	A+
		Linear Algebra I	EXE
		Mathematics I	EXE
		Physics IE	EXE
Aug – Nov 2018	Year 1/Semester 1	Industrial Engineering Principles & Practices I	A+
		Operations Research I	A
		Principles of Economics	A+
		General Education - Quantitative Reasoning	A-
		Ideas & Exposition I	A-
		Thinking in Systems: Diseases and Healthcare	CS
Jan – May 2019	Year 1/Semester 2	Data Structures and Algorithms (C++)	In-progress
		Industrial Engineering Principles & Practices II	In-progress
		Probability Models with Applications	In-progress
		Statistics and Probability	In-progress
		Quality Engineering I	In-progress
		Engineering Economy	In-progress
		Infectious Diseases: Dynamics, Strategies and Policies	In-progress
Jun – Jul 2019	Year 1/Semester 4	Programming Methodology II (Java)	TBC

NUS Grading Scale:

A+ & A (5.0); A- (4.5); B+ (4.0); B (3.5); B- (3.0); C+ (2.5); C (2.0); D+ (1.5); D (1.0); F (0)

S = Satisfactory; U = Unsatisfactory

CS = Completed Satisfactorily; CU = Completed Unsatisfactorily

EXE = Exempted; IC = Incomplete; IP = In Progress; W = Withdrawn