Wah Loon Keng

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EDUCATION

LAFAYETTE COLLEGE
BS in Mathematics
Minor in Physics
(Expected) Dec 2015 | Easton, PA
Cum. GPA: 3.88 / 4.0
Major GPA: 3.80 / 4.0

LINKS

Github: **kengz**
LinkedIn: **theoriesinpractice**
Google Scholar: **Wah Loon Keng**

COURSEWORK

UNDERGRADUATE

Advanced Algorithms
Artificial Intelligence
Senior Project: Machine Learning
Software Engineering
Theory of Computation
Date Structures & Algorithms

Fixed & Mixed Effect Models
Probability
Adv. Multivariable Calculus
Partial Differential Equations
Vector Spaces
Abstract Algebra
Topology
Real Analysis

Advanced Quantum Theory
Advanced Classical Mechanics
Advanced Physics Lab
Electromagnetic Fields
Oscillatory & Wave Phenomena

SKILLS

PROGRAMMING

Advanced:
Node.js • Java • C++ • R
Mathematica • HTML • CSS/SASS
Intermediate:
Python • PostgreSQL • Matlab • SAS

LANGUAGE

Fluent:
English • Mandarin • Malay
Cantonese • Hokkien

EXPERIENCE

SINGAPORE-ETH SMART CITIES LAB | Software Engineer
August 2015 - September 2015 | Singapore

- Researched and proved a graph theory algorithm for network optimization.
- Implemented an app with the traffic network data from Indonesia for the Shell Data Visualization Platform. Used Java and Processing.

FULCRUMTECH INC | Software Engineer (part time)
Oct 2014 - Present | Easton, PA

- HTML Email Standard & Automation - devised techniques to render HTML emails consistently across major email clients; Automatically generates HTML code from resources. Used Node.js, Handlebars and SASS.
- Data Transformer - parses and transforms National DCP's business data into specified CSV formats. Used Node.js.

RESEARCH

LAFAYETTE COLLEGE | EXCEL Undergraduate Researcher
Summer 2015 | Easton, PA
Worked with **Prof Ge Xia** on Vertex Cover - a signature NP-hard problem. Studied its complexity using Measure and Conquer to probe the NP-hard class.

Summer 2013 | Easton, PA
Worked with **Prof Ge Xia** on Yao Graphs - useful in wireless networks. Proved that the shortest paths always exist for Y-5, and not for YY-5. Published in SOCG'14.

PERIMETER INSTITUTE | Student Researcher
Summer 2014 | Waterloo, Canada
Worked with **Matthew Pusey** and **Tobias Fritz** on correlations, paradoxes in causal structures. Applied quantum computation to the foundations of quantum mechanics.

PROJECTS

Jarvis	Virtual assistant, bot interface for teams; cross-platform, cloud-based.
telegram-bot	RESTful API wrapper and bootstrap for Telegram bot.
reqScraper	Promise-based HTTP caller and web scraper in Node.js.
lomath	Performant math library for data science in Node.js.
Risk-game	AI to play the game Risk, with statistical analysis.
dokkerJS	Automated Node.js documentation generator.

AWARDS

2014	Lafayette College Benjamin F. Barge Mathematical Prize
2013-14	2nd, 3rd, Lafayette College Barge Math Competitions
2012	2nd, LVAIC Regional College Math Competition
2010	Gold, Top 5 Team, Malaysian National Physics Competition
2009	Gold, ICAS International Math Competition

PUBLICATIONS & NOTES

[1] Barba et.al. *New and Improved Spanning Ratios for Yao Graphs.* **SOCG'14**, in press.
[2] W.L. Keng. *Correlations in C3.* **Perimeter Institute**, research note.
[3] W.L. Keng. *BlockCode and Bundled Form.* **Perimeter Institute**, research note.