

Wah Loon Keng

github.com/kengz
kengzwl@gmail.com | (484) 542 3520 | kengw@lafayette.edu

EDUCATION

LAFAYETTE COLLEGE

BS IN MATHEMATICS

MINOR IN PHYSICS

(Expected) Dec 2015 | Easton, PA

Cum. GPA: 3.88 / 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

Data 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

Proficient:

Javascript (and Node.js) • Java • C++
R • Mathematica • HTML • CSS/Sass

Basic:

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, LLC | 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 client data into CSV formats based upon stored business requirements. 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	2 nd , 3 rd , Lafayette College Barge Math Competitions
2012	2 nd , 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.