

JEFFREY KAM

hykam@uwaterloo.ca \diamond github.com/lazypanda10117

RESEARCH INTEREST

I am interested in the following areas:

- Graph Theory and Algorithms
- Computer Algebra

EDUCATION

University of Waterloo

Sep 2017 - Present

- Candidate for B.Math. in Computer Science and Combinatorics & Optimizations
- Minor in Pure Mathematics
- MAV: 86.5 % and 81 %
- Term Dean's Honours List

Relevant Courses

- Graph-theoretic Algorithms - CS762
- Introduction to Graph Theory - CO342
- Algorithms - CS341
- Data Structures and Data Management (Enriched) - CS240E
- Group and Rings - PMATH347
- Algebraic Number Theory - PMATH441

PUBLICATION

- **UBCIS: Ultimate Benchmark for Container Image Scanning**,
with Shay Berkovich and Glenn Wurster
Published in 13th USENIX Workshop on Cyber Security Experimentation and Test (CSET 20).
<https://www.usenix.org/conference/cset20/presentation/berkovich>
- **bioSyntax: Syntax Highlighting For Computational Biology**,
with A. Babaian, et al.
Published in BMC Bioinformatics 19, 303 (2018).
<https://doi.org/10.1186/s12859-018-2315-y>

RESEARCH EXPERIENCE

University of Waterloo - Symbolic Computation Group

Undergraduate Research Assistant

May 2020 - Present

Waterloo, Canada

- Experiment with J -ideal and Smith Normal Form.

BlackBerry - Security Research Group

Security Research Intern

January 2020 - April 2020

Waterloo, Canada

- Researched and designed a universal benchmark for quantitatively measure the effectiveness and accuracy of container image scanners
- Analyzed techniques of image inspection and vulnerability scanning through open source technologies
- Designed a universal import framework for Anchore Engine to extend our scanning capabilities

- Researched about utilizing machine learning on fuzzing for algorithmic complexity vulnerability
- Presented on current developments of fuzzing with machine learning and algorithmic complexity based fuzzing, along with potential problems, experiments, and optimizations that the Security Research Group can perform.

WORK EXPERIENCE

GTS

Software Engineering Intern (C++)

May 2019 - Aug 2019

Remote (New York, US)

- To be decided

Zenefits

Software Engineering Intern

May 2019 - Aug 2019

Vancouver, Canada

- Developed new permission services in Django with extensive unit tests to guard against unauthorized edits of review data
- Designed a sequential document update service using a distributed message queue system Celery

Horizn

Web Developer Intern

May 2018 - Aug 2018

Toronto, Canada

- Built Laravel components for internal app and wrote Python scripts to transfer clients' data in AWS
- Wrote automation scripts to scrape data from files and database and compile them into json files

AWARDS

- First place in HackSeq 2017 bioinformatics competition in UBC
- Honourable mention in Canadian Computing Competition Hong Kong 2017
- University of Waterloo President's Scholarship

PROJECTS

Statistical Analysis on Amazon Marketplace Data

- Analyzed Amazon marketplace data with using Python frameworks, such as Numpy and Pandas
- Employed various mathematical methods, such as PCA, time series, decision tree, and sentiment analysis

SKILLS

Programming

Python (including Numpy), C++, C, Sage, TypeScript, JAVA, PHP

Databases

PostgreSQL, MySQL, NoSQL

Tools

Git, GCC, Docker, Linux, Jupyter Notebook