Xinya Yang

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EDUCATION

B.A. in Computer Science

GRINNELL COLLEGE | MAY 2020
Major GPA: 3.87 with Honors

INTERESTED TOPICS

Empower non-coders & researchers
Improve code development process
Proofs, types, computation theory
Operating systems and DevOps

COURSEWORK

Computation

HCI and programming
Computation theory
Computer vision
Advanced operating systems
Computer organization & architecture
Algorithm and data Structure
OOP, imperative, functional programming paradigms

Math

Graph theory • Linear algebra • Calc

SKILLS

Programming Languages

C/C++ • TypeScript/JavaScript • Rust • Python• Haskell
Java • MATLAB • Bash • Scheme • Assembly • Dart
Go • Swift • Objective C

Frameworks, Libraries, Tools

Web Dev
D3.js • Node.js • React • Webpack • Webassembly • Flutter
DevOps & Data
Jenkins • Docker • Kubernetes • MySQL • RabbitRMQ
Deep Learning
TensorFlow • scikit-learn • Keras

General

Software
ADOBE suite • Tableau • Stata • LaTeX
Languages
English • Chinese • German • Korean

Interests

Dance
Kpop Dance cover & performance
Modern dance composition & performance w/ theme of inclusion
Origami
Led a 120-min origami class combining lecture & hands-on activities

INDUSTRY WORK EXPERIENCE

Qualcomm | JULY 2020 - PRESENT

software engineer

- Work on various 5G modem firmware features
- Maintain the testing tools and further streamline the automation
- Establish data collection and analysis pipeline for machine learning team

PROGRAMMING PROJECTS

Developing Tools and Productivity | SPRING 2020 - PRESENT

Simple Regex </> : An interpreter in Haskell to safe human from inhuman regex syntax.
Log Analysis </> : A VScode extension to filter keywords for efficient examination of log files

- Compatible with VScode async workflow
- Support multiple tabs and multiple windows
- 300 downloads with 5 start review

Web and Games | FALL 2020 - PRESENT

Infared Camera Placement Challenge : Designing and implementing a game for public awareness of the wildlife conservation and research process for ShanShui Conservation Center

- Design prototype in Figma
- Implement the game in flutter

QR-Haggis </> : Web poker game that plays through QR-code offline or websocket online

- Wrote game logic in Rust and compiled to Webassembly; Frontend rendering in React
- Hand crafted the compression algorithm to fit the whole game state into QRcode

Operating Systems and C/C++ | SUMMER 2018 - SUMMER 2020

Checkboard : Use virtual page aliasing to mitigate false sharing, a cache performance issue

- Wrote a customized memory allocator
- Utilized hardware performance stats as heuristics

No Use after Free </> : A customized memory allocator to prevent all use-after-free and double-free errors in C/C++, which are currently the top root causes of CVE

- Utilized virtual page aliasing and MMU to invalidate freed objects
- Covered corner cases including large objects, interior pointers, parallel programs
- Very low time overhead in the evaluation process (7/10 benchmarks have <1% overhead)

AnaLysis of EXecution : A software profiler to analyze physical resource usage

- Spearheaded the development of data visualization part using D3.js
- Streamlined C++ code collecting performance data through Linux API
- Designed and standardized the data format for the data analysis in Protocol Buffers

PUBLIC SERVICE

PPE donation from China to US for COVID-19 | SPRING - SUMMER 2020

organizer

Initialized and organized the donation of PPE from 150+ donors to a small college town

- Collaborated with student families, alumni, manufacturers, and non-profit organizations
- Selected products and wrote education materials guided by health professionals and standards
- Led the fund-raising, purchase, shipping, distribution and education of PPE usage
- Special care for vulnerable groups including the elders, children, MCPs, and immigrants

Assisting environmental agency and researchers | SPRING 2020 - PRESENT

developer

- Developing the camera placement game as mentioned above for public education
- Automated department data analysis pipeline using JupyterLab for non-coder researchers

Intro CS Classes & Liberal Arts in Prison | FALL 2017 - SUMMER 2020

teaching assistant, volunteer

- Graded homework and labs, held review sessions, and wrote worksheets
- Emphasized high level planning, and best practices in coding
- Led 1:1 math courses for students in prison w/o concrete math foundation