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
▰ Ruby • Go • Swift • Objective C

Frameworks, Libraries, Tools

Web Dev
▰ D3.js • Node.js • React • Webpack •
Webassembly • Flutter
DevOps & Data
▰ Jenkins • Docker • Kubernetes •
MySQL • RabbitMQ
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
- Design and implement various 5G modem features
- Maintain the debugging tools and further streamline the automation, which saves on-call developers debugging time on urgent issues
- Establish data collection, cleaning and storage pipeline for ML purpose

PROGRAMMING PROJECTS

Developing Tools and Productivity | SPRING 2020 - PRESENT
Simple Regex </> : An LISP like language that saves human from inhumane regex syntax
- Enables writing type-checked, modular, reusable expressions using functions and variables.
Log Analysis ⚭ </> : A VScode extension to filter keywords for efficient examination of log files
- Compatible with VScode async workflow
- Supports multiple tabs and multiple windows
- 700 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