ALEX DING

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Education

Brown University   September 2020 - May 2024
Concurrent B.S.. and M.S. in Computer Science | GPA: 4.00
> **Relevant Courses**: Software Engineering, Operating Systems, Programming Languages, Software Security and Exploitation, Prescriptive Analytics, Computer Graphics, Machine Learning, Deep Learning, Data Science, Blockchains and Cryptocurrencies, Information Theory, Statistical Inference, Linear Algebra, Abstract Algebra.

Work Experience

Software Engineering Intern   June 2022 - August 2022
Bloomberg L.P., Data Science Runtime
> Built **Kubernetes**-native toolings to enable ML teams to easily define end-to-end pipelines in **Argo** workflows.
> Collaborated across the org to design and implement solutions for cross-cluster authentication via token exchange, IO via **GraphQL**, and containerization via **Buildpacks** using **Go**, **Python**, and **Docker**.

Head Teaching Assistant for Software Security and Exploitation   April 2022 - Present
Brown University
> Hired and managed **10+ TAs** to develop course materials, host office hours, and grade assignments.

Projects Director   June 2021 - Present
Full Stack at Brown
> Coordinated project teams and hosted weekly stand-ups and 1:1s to facilitate Agile development process.
> Directly managed several high impact projects, including Hours, a TA hours queue management platform built using **Go** and **TypeScript** used by **1000+ students/month**, and The Critical Review, a course review website used by **5000+ students/month**.

Projects   *Projects available on my website*

Surrealist Cloth
> Custom **C++** graphics engine capable of rendering complex 3D scenes into images via ray tracing, implementing the Phong illumination model, texture mapping, as well as path tracing to support glass and metallic surfaces.

CounterPointer
> Extensible **Java** species counterpoint checker and generator for music theory students, with a **TypeScript** interactive music editor embedded in a **React** web app, with CI/CD managed by **Docker** and **Heroku**.

SAT Solver
> Blazing fast solver for NP-complete boolean satisfiability problems powered by watched literals, conflict driven clause learning, custom variable decision heuristics, and random restarts, built in **Julia**.

Neural Net Flowchart
> Drag-and-drop UI to rapidly define and train neural networks in the browser with **React** and **Tensorflow.js**, supporting model saving and permalink sharing with a **Python** API backed by **PostgresSQL**.

Publications

> Bryce Blinn, **Alex Ding**, R. Kenny Jones, Manolis Savva, Srinath Sridhar, Daniel Ritchie, "Learning Body-Aware 3D Shape Generative Models." **SIGGRAPH Asia 2022**. *In Review.*
> **Alex Ding**, Qilei Chen, Yu Can, Benyuan Liu, "Retinopathy of Prematurity Stage Diagnosis Using Object Segmentation and Convolutional Neural Networks." **IJCNN 2020**.
> **Alex Ding**, Yan Gu, "An Evaluation of UPC++ by Porting Shared-Memory Parallel Graph Algorithms." **MIT PRIMES**.
> Contributed to and created a Chinese translation of **Python Like You Mean It**, an online resource for **Python**.

Skills

Languages: Go, Python, TypeScript, JavaScript, Java, C, C++, Julia, Racket, HTML5, CSS.
Web Frameworks: React, React Native, SASS, Node.js, Next.js.
Technologies: MapReduce, Kafka, SQL, GraphQL, Kubernetes, Docker, Jenkins, Git, Jira, Unix.