Christopher Allsman

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Education

2015-2019 BA in Computer Science - The University of California, Berkeley
Graduated with High Distinction (3.87 GPA)

Career Experience

2020 - Micro Focus Fortify
Software Engineer II - Compilers & Static Code Analysis

- Maintain and develop new features for the JavaScript area of the Fortify SAST product, entaliling generating an intermediate representation of ECMAScript & Typescript code, modifying static analysis algorithms to align with language semantics, and improving user experience when scanning projects.
- Introduced type propagation within projects, allowing for vulnerabilities to be more directly targeted and leading to 20% faster scans and up to 15% fewer false positives
- Architected a translator for the client-side SAPUI5 framework, directly enabling the creation of rules targetting 25 new vulnerabilities.

2017-2019 University of California, Berkeley
CS61A Instructor (2019), Teaching Assistant, Head of Content (2017 -2019)

- Spearheaded design and testing for content distributed to over 1,500 students each semester, including homework, labs, and the course's first new project since 2015.
- Analyzed feedback from over 200 students and devised improved, personalized sections and other curricular elements for the course's first online offering to better address students' learning needs
- Refined existing lesson plans and innovated new methods for teaching concepts in Python, Scheme, and SQL, leading to teaching evaluations in the top 10% of all GSIs and a teaching effectiveness rating of 6.2/7, higher than 2/3rds of recent instructors

Awards & Publications

2020 Nifty Assignments (Publication) (Feature at SIGSCE 2020)
2020 Outstanding Graduate Student Instructor
2019 Outstanding Undergraduate Teaching and Leadership

Volunteer Experience

2021- Microsoft TEALS (Technology Education and Literacy in Schools)
Volunteer Teacher

- Present lessons and organize activites for an introductory computer science course composed of 12 high school students
- Plan long-term curricular goals and ensure compliance with classroom/school policies

2016-2019 Computer Science Mentors
Internal Vice President (2019), Course Coordinator (2018), Mentor (2016-2017)

- Facilitated the development of small-group tutoring sections by organizing scheduling logistics and content creation, scaling the organization to support over 1,500 students and 300 mentors
- Revamped training given to 100+ mentors at a bi-annual orientation to address multicultural competency, classroom diversity, and mental health issues

Projects

2019 Lab Planner

- Led a multidisciplinary group to create a LIMS-like Java application capable of generating genetics experiments from a minimal specification, used in practice to automate running a 25-person lab
- Simplified the process of tracking lab inventory by building a database of equipment, automatically updated as experiments progress and preloaded with 15 types of containers
- Enabled scheduling for 30+ person labs by assigning students tasks based on their availability and level of training while arranging tasks to minimize downtime

2018 Typed Python Compiler

- Teamed with a group of 4 people to write over 15,000 lines of C++ code in ~3 months, developing a compiler which iterated on Python 2 by introducing static type checking, generics, and overloading
- Owned significant elements of the parsing and code generation pipelines, making contributions such as optimizing integer operations to be twice as space-efficient and up to ten times faster

Skills

Languages	**Technologies**	**Professional Skills**
Python (Expertise)	Unix Environments	Test Driven Development
Java (Experienced)	Git Version Control	Relational Databases/SQL
TypeScript (Experienced)	NumPy, pandas, SciPy	CI/CD (Jenkins, TeamCity)
Go (Familiar)	Server-side JavaScript (Node.js)	