Vincent Tantra

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EDUCATION

University of California, Berkeley - *B.S. in Electrical Engineering and Computer Science* CLASS OF 2021
- **Relevant Coursework**: Data Structures, Artificial Intelligence, Algorithms and Intractable Problems, Computer Architecture, Graphics, Design of Info Devices/Systems, iOS Development, Discrete Mathematics, Probability Theory, Multivariable Calculus.
- **Fields of Interest**: Software Development, Full Stack, Graphics, VR/AR, Artificial Intelligence, UX/UI, Game Development

EXPERIENCE

Software Engineering Intern – *21 Labs, Inc.* JUN 2018 – AUG 2018, CAMPBELL, CA
- Developed part of an automated app QA tester using NLP libraries and practices (spaCy) to give screens unique identifiers
- Spearheaded the filtering of document object models and logs, allowing other services to analyze an app's structure with ease
- Tested the use of trees as a means of representing application structures and reduced element search runtime to $O(n*\log(n))$
- Designed a custom comparator for application screens using the Xmldiff framework in order to identify similar screens

Academic Intern – *Computer Science 61 Series* JAN 2018 – AUG 2018, BERKELEY, CA
- Fostered the introductory CS community at Berkeley by providing mentoring and debugging assistance in lab sections or office hours
- Advised groups of students on complex programming structures and assisted in the understanding of hashmaps, linked lists, and stacks
- Volunteered to provide logistical support to more than 1,000 students using a strong knowledge of course policies

Registration Form Developer – *AFX Dance Technology Branch* JAN 2018 – MAY 2018, BERKELEY, CA
- Developed a customized signup form for the AFX Dance Community to handle a dataset of more than 2,000 signup requests
- Devised a system that allowed auditionees to edit information after submission, while retaining logistics such as their audition number

PROJECTS

Virtual Reality Environment Simulator – *C#, Unity, XCode* APR 2019 – MAY 2019
- Developed a mobile virtual reality application for the iPhone that allowed exploration of a pre-rendered 3D interactive environment
- Utilized a wide range of different technologies and applications, such as Unity3D, XCode, and the Google Cardboard SDK
- Explored realistic lighting practices in a VR environment, and used vector mathematics to implement other functionality like movement

Golang Concurrent Cached File Server – *Golang* APR 2019 – MAY 2019
- Developed a basic file server that allowed concurrent accesses using the Go language, and implemented basic cache principles
- Programmed a viable system that handled a variety of cases that occur in a file server, such as timeout issues or read errors
- Handled security concerns such as traversal attacks by programming a file sanitization method using iterative string manipulation

Physical Renderer and Pathtracer – *C++* MAR 2019 – APR 2019
- Implemented the core routines of an image renderer using path-tracing algorithms, with graphic practices such as ray-scene intersection
- Utilized the bounding volume hierarchy as a core data structure to lessen ray intersection tests and reduce rendering time by 762 seconds
- Recreated illumination techniques combined with adaptive sampling that samples pixel values according to a statistical distribution

"Bus Arranging" Algorithm – *Python* DEC 2018
- Designed an algorithm focused on maneuvering an NP-Hard problem that maximises edge connections within subclusters of a graph
- Generated a solution focusing on finding local optimums in feasible runtimes, allowing for greater performance than 72% of the class
- Optimized the generated solutions using a unique combination of methods such as simplex and simulated annealing

EXTRACURRICULARS

The [M]ovement Dance Organization – Lead dances as a team artistic director and choreographer JAN 2019 – MAY 2019
Codeology Club – Used Tensorflow to train models to detect certain objects in web images AUG 2018 – DEC 2018
PBL Technology Committee – Used R and Excel to process real business datasets AUG 2018 – DEC 2018

SKILLS

- **Programming Languages:** Proficient - Java, Python, C, C++, Golang; Familiar - JavaScript, SQL, HTML, CSS
- Familiar libraries, frameworks, etc.: Git, JSON, Numpy, spaCy, XMLUtils, Appium, Flask, Unity, Android Studio, XCode, Processing
- Design/Artistic programs: Adobe Illustrator, Maya, Unity, Adobe Premiere Pro; Management programs: Powerpoint, Excel
- Strong leadership, public speaking, and team building skills from other activities (MUN, Varsity athletics, directing dance teams, etc.)