

# Vincent Tantra

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*UC Berkeley undergraduate with industry experience in web application development and game development engines. Based in the California Bay Area with interests in frontend, graphics, VR/AR and UX/UI.*

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## EDUCATION

### University of California, Berkeley

Graduating Dec 2020

- B.S in Electrical Engineering & Computer Science, 3.34 GPA
- Coursework: Data Structures, Artificial Intelligence, Algorithms, Graphics, Computer Security, Image Processing

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## SKILLS

- **Programming Languages:** Python, Lua, Java, JavaScript, TypeScript, C, SQL, HTML/CSS, Golang, C++; VCS experience with git
- **Protocols & Libraries:** React, JSON, NumPy, spaCy, XMLUtils, REST, OpenCV, GraphQL, PyTorch, Tensorflow
- **Frameworks:** Flask, React Native, Appium/Selenium, Ruby on Rails, Bootstrap

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## EXPERIENCE

### Roblox Corporation – *Software Engineering Intern*

JUN 2020 – AUG 2020, SAN MATEO, CA

- Implemented 3D modeling tools for proprietary game development engine & drove internal research on automation forward
- Developed a set dressing tool to enable instant, controlled decoration on virtual terrain, outspeeding manual decoration by 10 times
- Spearheaded research on performance & scalability of the aforementioned tool & procedural generation algorithms, allowing simultaneous smart placement of around 500 high-fidelity game assets in 0.53 seconds as opposed to hours of manual placement

### Middesk (CodeBase Client) – *CodeBase Software Developer*

JAN 2020 – MAY 2020, BERKELEY, CA

- Created a fully-hosted, flexible business-onboarding flow that accelerated & streamlined the business partner info collection process
- Implemented a robust form using React, Regex, & PostgreSQL, assuring the successful collection of values such as tax ID field & files
- Introduced lasting UI improvements on the original flow mockup, such as adding indicators for required vs. optional fields

### Storr, Inc. (CodeBase Client) – *CodeBase Software Developer*

SEP 2019– DEC 2019, BERKELEY, CA

- Created a social backend service for Storr's mobile retail app to enable users to send SMS & email invites to their contacts
- Utilized Twilio & SendGrid's API to implement a send-invite endpoint with phone number/email validation
- Developed a comprehensive suite of unit & integration tests & ensured isolated functionality for cases such as malformed data input

### 21 Labs, Inc. – *Software Engineering Intern*

JUN 2019 – AUG 2019 & DEC 2019, CAMPBELL, CA

- Improved the test maintenance experience for a web service providing mobile application autonomous QA testing
- Implemented DOM parsing & Android log processing endpoints, allowing other microservices to analyze an app's structure with ease
- Built a custom analyser that crawls an app's frontend structure & UI using tree search algorithms, XMLdiff & NLP libraries (spaCy)
- Accelerated test suite management by building a flow updater that detects changes in an app's screen flow & enables tests to self-adapt

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## PROJECTS

### Light Field Aperture and Focus Manipulation – *Python*

APR 2020 – MAY 2020

- Utilized data from the Stanford Light Field Archive to simulate image refocusing and aperture adjustment in post-processing
- Innovated a unique dataset comprised of 100 screenshots taken from a video game environment and invented a virtual light field camera
- Experimented with virtual images to simulate depth of field in video game environments using unique computer vision concepts

### Virtual Reality Environment Simulator – *C#*

APR 2019 – MAY 2019

- Charted a iOS virtual reality application that allowed exploration of lighting in a pre-rendered 3D environment
- Incorporated a wide range of different technologies & applications, such as Unity3D, XCode, & the Google Cardboard SDK
- Tested realistic lighting practices in a VR environment, & used vector mathematics to implement other functionality, such as movement

### Concurrent Cached File Server – *Golang*

APR 2019 – MAY 2019

- Developed a basic file server that allowed concurrent server accesses & implemented caching for improved performance
- Engineered solutions to common file server issues, 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 & 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 & reduce rendering time by around 70%
- Recreated illumination techniques combined with adaptive sampling, allowing for realistic lighting of 3D models in a contained box