Shivendra Kushwah

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EDUCATION

University of California, Berkeley   August 2016 - May 2019
Degree: *Bachelor of Science: Electrical Engineering and Computer Science,* **Cumulative GPA**: *3.93*
Degree: *Master of Science,* **Emphasis:** *Computer Systems and Security (In Progress)*   August 2019 - May 2020

TECHNICAL SKILLS

Proficient: Java/Android, C/C++, Python, and Spring Framework
Familiar: Agile Development, Git, Scala, REST, Redis, Firebase, Hack/PHP, R (ggplot2), and MySQL

WORK EXPERIENCE

Facebook | *Security Software Engineering Intern*   May 2019 – August 2019
- Worked on the Authorization team to develop and maintain Facebook's access control framework for sensitive backend services (developed in C++, Python, and Hack/PHP)
- Implemented new mechanism of granting ACL access that reduces our attack surface by issuing temporary access and renewing based on calculated utilization thresholds
- Created data pipelines to determine entry utilization and created a new background job in Facebook's AuthorizationService to handle enforcement of this new grant type and routinely delete unused entries

Workday | *Research & Development Software Engineering Intern*   May 2018 – August 2018
- Designed and created a Blockchain Android Wallet as part of the Workday Next Team
- Implemented Camenisch-Lysyanskaya group signature scheme in order to send, receive, and save secure data
- Contributed to an open-source crypto library with an approved and merged GitHub Pull Request
- Used private keys from device's secure enclave to encrypt data to prevent offline attacks
- Worked on Blockchain backend Java Spring REST microservice to test Wallet application

Yahoo | *Backend Engineering Intern*   May 2017 – August 2017
- Developed production software using the Java Spring Framework as part of the Tripod Pixel Team (backend for products such as Yahoo Mail and Flickr)
- Made existing unique media ID generator into a REST microservice with a Redis backfill that is called when a new item is added to the current database (~20 requests per second)
- Participated in Agile sprints and used tools such as GitHub, Splunk, and Mockito to develop software

ACADEMIC RESEARCH

University of California, Berkeley | *Undergraduate Researcher*   January 2018 – Present
Intel SGX Password Manager
- Worked with Intel's SGX SDK (creates a protected area of execution in memory and allows for placement of application code) to create a secure password manager with a command line interface
- Modified the Scrypt library (secure key derivation) as well as the binn library (object serialization) to allow for compatibility in this special environment

P Secured
- Currently working on extending the P programming language to include "@Secure" and other annotations to enable asynchronous state machines to be deployed in trusted execution environments (such as Intel SGX)
- State machines will perform remote attestation to validate each other and communicate using secure protocols

PROJECTS

YearBook—Android App | *Co-Founder, Android*   March 2017 – May 2018
- Built cross-platform photo-a-day app that enables convenient documentation of activities in preschool classrooms
- Application featured a Web platform, iOS, and Android app (available on Apple App Store and Google Play Store)
- Team was accepted to Free Ventures (startup accelerator) and pitched to VCs such as Sequoia and General Catalyst

https://github.com/ShivKushwah   **Candyland**, **Salesforce-Web-Crawler**, **Pokedex, etc.**
Created additional projects at hackathons such as HS Hacks II, AT&T Hackathons, Tree Hacks, and CalHacks