# WOOHYUN MICHAEL JO

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## EDUCATION

**B.A. Computer Science** | **University of California, Berkeley**
Graduation Term: Fall 2023
GPA: 3.9 / 4.0

**Relevant Coursework** | Computer Programs, Computer Security, Data Ethics, Data Structures, Discrete Mathematics & Probability Theory, Database Systems, Machine Structures, Artificial Intelligence, Information Devices & Systems, Machine Learning, Algorithms & Intractable Problems, Operating Systems, Software Engineering, Blockchain & Cryptocurrency

## SKILLS

Python, Java, C/C++, Go, SQL, Hive, ClickHouse, HTML/CSS, JavaScript, Django/Jinja, Docker, Jenkins, Swift, x86 MIPS, Lisp

## WORK EXPERIENCE

**TIKTOK** | Software Engineer Intern (Account Integrity) — May — August 2023
**ML & Data Engineering:** Risk Data Mining — SQL, Apache Hive, Clickhouse, Python, Go, JS

- Created a standalone web-registration fraud defense pipeline; streamlined fake account firefighting by automating offline cluster perception.
- Implemented a CatBoost-RF model into TikTok's internal visualization pipeline (Aeolus), introducing a new method to visualize cluster-specific risk parameters (GINI importance) under static DB constraints.
- Created an efficient data query framework; 3-4x faster hive data queries for adversarial account analysis on TikTok's mobile applications.
- Engineered a new API integration procedure to automate DDL/Integration tasks across databases.

**PROOFPOINT** | Software Engineer Intern (Cloudmark) — January — May 2023
**Backend:** Infrastructure and Systems — Java, Python, Docker, Jenkins, Unix

- Automated pipeline deployment approvals for Cloudmark Gateway (Proofpoint's e-mail threat detection software) by developing a Python script that integrates JFrog Artifactory and Jenkins, removing manual workload in development operations.
- Created a JZON report format for smoke tests with relevant metrics (global counts, critical tests, OS, etc.) to formalize and implement rules for build defect analysis.

**TIKTOK** | Software Engineer Intern (Anti-spam) — May — August 2022
**Data Engineering:** Risk Data Mining — SQL, Apache Hive, Python, Pandas DataFrames

- Engineered empirical evaluation metrics to improve antispam precision, eliminate resource waste, and identity faulty rules in TikTok's rule-based business risk detection system.
- Developed a mathematical SOP for batch rule retirement to reduce manual workload for fraud detection tool maintenance.

**FASOO** | Software Engineer Intern (Web Security) — June — August 2021
**Full Stack:** Development Operations — Python, Flask, MySQL, HTML5/CSS, JS

- Developed an intentionally vulnerable Flask application (PyFlaGoat) to test, improve, and update Sparrow, an internal S/DAST testing engine.
- Integrated an eminent defense portfolio in Sparrow SAST; deployed a securing mechanism to remediate obfuscated OWASP 10 vulnerabilities in PyFlaGoat that are not detectable using alternative applications (e.g. Sonarcube).

## PROJECTS

**AccuLimit** | git.io/J1kEB — August 2021
Personal Project • Python

- Created a Darwin application that protects the host's battery health by modifying the root SMC and limiting the maximum battery charge.

**Genie Music Scrapper** | git.io/J1kEV — July 2021
Personal Project (Browser Extension) • JS

- Implemented a browser extension that executes JavaScript commands to compile Genie Music playlists into classified plain text lists.

**Gitlet** | git.io/J1kEA — March 2021 — April 2021
Course Project (CS 61B: Data Structures) • Java

- Implemented a version-control system that employs hashed file serialization to mimic some of the basic features of the popular system Git.

## RECOGNITION

**UPE Computer Science Honor Society** | Inductee — September 2021 — Present