**Kate O’Connor**

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Senior at UC Berkeley studying computer science, with a keen interest in application security, information security, and threat detection. Quick learner and problem solver with experience in working collaboratively in professional environments while independently contributing to and advancing team objectives. Passionate about honing and strengthening my software engineering skills and continuously learning more about cybersecurity through practice (with platforms like PicoCTF, HacktheBox, and HackerOne).

# EDUCATION

**University of California, Berkeley** May 2024

Bachelor of Arts in Computer Science, 3.7 GPA

**Coursework:** Calculus, Discrete Math, Data Structures, Structure and Interpretation of Computer Programs, Computer Architecture, Introduction to Artificial Intelligence, Designing Information Devices and Systems, Blockchain for Developers, Principles and Techniques of Data Science, Operating Systems and Concurrency, Introduction to Software Engineering, Computer Security, Efficient Algorithms and Intractable Problems

**Clubs and Organizations:** Berk1337 Cybersecurity at Cal, CS Kickstart, Women in Cybersecurity, Rewriting the Code, Open Computing Facility, Cal ACLU Club (Technology & Privacy), Association of Women in EECS

# SKILLS

**Languages***:* Java, Python, C, Ruby, JavaScript, HTML, CSS, SQL, Golang, Scheme, Ruby, RISC-V Assembly, Solidity

**Technical***:* Git, Jupyter Notebooks, Matplotlib, Unity, Regex, Docker, LaTeX, Pandas, Burp Suite

# EXPERIENCE

**Undergraduate Research Assistant | University of California, Berkeley**2022-23 School Year

* Identified success metrics for decentralized autonomous organizations (DAOs) by compiling data on 150+ organizations. Used Etherscan APIs to construct a time series dataset tracking key summary statistics.
* Collaborated with a graduate CS student from Santa Clara University to create a database of relevant information about 150+ DAOs.

**Retail Associate | Anthropologie**June 2021 – Present

* Responsibilities include operating cash register, managing fitting rooms, and interacting with customers to provide best possible retail experience. Seasonal employee.

# PROJECTS

**PicoCTF** | Bash, Linux, Python

* Cybersecurity training platform, placed 4th out of 80+ participants in the CTF at Glass Firewall Conference: Breaking Bytes and Barriers (hosted by Github and HackerOne)

**Cybersecurity Shellcode Project** | C, Bash, GDB

* Created a virtual machine to exploit eight C programs provided by CS161 staff (attacks used: string formatting, ret2ret, buffer overflow, off by one, integer conversion).
* Hardcoded various stack and memory exploitations to deploy malicious shellcode and provided write-up of attack approach, including conceptual idea, memory addresses and values found through GDB commands, and proof of the executed exploit.

**Secure File-Sharing System** | Golang

* Collaborated on a secure file storing and sharing system that updates across devices in real-time and encrypts against adversarial attacks.
* Used fuzz testing, penetration testing, and cryptographic authentication to secure the system against malicious actors.

**Machine Learning Model** | Python

* Built a perceptron and a mini-library for creating and training neural networks.
* Used this library to approximate a sin(x) function, classify digits, and do reinforcement learning and language identification.

**Classify** | RISC-V Assembly, Java, Python

* Built a program that read in pictures of handwritten digits and constructed a neural net using matrix functions identify the image with high accuracy.
* Emphasis on memory allocation and calling convention within RISC-V Assembly, writing tests, and interacting with files.

**Jump61B** | Java

* Created 2 player strategy-based game and an artificial intelligence bot that would detect the optimal move.
* Emphasis on runtime efficiency, prediction algorithms, textual input, and integration testing.