# Gabriel Brown

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## EDUCATION

**Freie Universität**                                                      **Expected: March 2027**
*M.Sc. Data Science*                                                                *Berlin, DE*
- **GPA: 1.0 (EU Scale)**
- **Relevant Coursework:** Machine Learning, Deep Learning, Data Visualization, Time Series Analysis

**Columbia University**                                                      **Graduated: May 2020**
*B.A. Computer Science, Mathematics*                                                *New York, NY*
- **GPA: 3.8/4.0 (US Scale)**
- **Relevant Coursework:** Data Structures, Algorithms, Linear Algebra, Probability, Statistics, Calculus, ODEs, Real Analysis, Abstract Algebra
- Co-president of Columbia Rocketry Club

## WORK EXPERIENCE

**Sauce Labs GmbH**                                                          **Feb. 2022 – May 2023**
*Software Engineer*                                                                 *Berlin, DE*
- [Sauce Labs](Sauce Labs) is a platform for web and mobile application testing and error monitoring with over 300k users.
- I was one of two Android Reverse Engineers at the company, leading data-driven performance optimization and systems engineering for Sauce Labs' Real Device Cloud, supporting automated mobile app testing on thousands of Android devices.
  - Reduced Android session startup delays >1 minute by 80% by analyzing performance logs and identifying bottlenecks, then implementing optimized APK unpacking logic.
  - Designed and deployed an app resource caching microservice (Golang, Docker, Terraform) that accelerated test session spin-up by 10%.

**Back Technologies GmbH**                                                  **Sept. 2020 – Jan. 2022**
*Software Engineer*                                                                 *Berlin, DE*
- Back was a back-office automation platform, acquired by Personio a few months after I left.
- As Backend Software Engineer at Back Technologies, I built data models, APIs, and messaging integrations to support automated HR workflows in a fast-paced, startup environment.
  - Launched chat integrations for Microsoft Teams and Google Chat, enabling our sales team to close 7 new deals with companies using these messaging tools.
  - Designed relational data models and wrote SQL queries in PostgreSQL to support internal analytics and HR features like time-off and sick day tracking.

## PROJECTS

**[Tenant Rights RAG App](Tenant Rights RAG App)**
- A legal assistant built in Python with LangChain and OpenAI that answers questions about renter protections using retrieval-augmented generation over German tenancy law.

**[Poker Bot](Poker Bot)**
- A poker-playing AI built in Python using reinforcement learning and Markov decision processes.

**[Additive Synthesizer VST](Additive Synthesizer VST)**
- A virtual synthesizer built in C++ with JUCE using Fourier analysis.

## RESEARCH EXPERIENCE

**Columbia University, Columbia Internet Real-Time Lab**                              **2019 - 2020**
*Research Assistant, Software Engineering*                                           *New York, NY*
- Developed [anomaly detection software](anomaly detection software) to identify infected IoT devices on real-time networks.

**Columbia University, Nevis Labs**                                    **2017-2018**

*Research Assistant, Data Science*                                    *New York, NY*

- Analyzed antiparticle simulation data in Python generated with Geant4.

## SKILLS & INTERESTS

- **Languages:** Python, SQL, Go, Java
- **Tools:** PyTorch, Pandas, Scikit-learn, NumPy, Altair, Git, Bash, Docker, Github Actions, Jenkins
- **Interests:** Rock Climbing, 90's IDM, Haruki Murakami novels