

BIANCA CAPRETTA

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EXPERIENCE

Spotify | Senior Backend & Data Engineer

New York, NY (March 2024 - Oct 2025)

- Tech lead for new users: made Home page reactive to user actions by building new user triggers in event-driven streaming pipelines w/ **PubSub**. Optimized content freshness by implementing 'coldstart' shelves using the triggers
- Cross-functional lead for "Home Friday Takeover": implemented 4 new music shelves, programmed experience on all feeds; ran AB & holdback tests to learn impact of showing feature to all users; launched w/ extensive monitoring
- Drove a 60% increase in pre-save user engagement by generating personalized upcoming releases on Home; designed & built **Batch** data pipelines, **BigTable** storage schema, and a low-latency **Java** backend architecture
- Improved Home personalized music recs by building **training data infrastructure** for ML candidate generation system; led to a 26% increase in track connections and a 1.5% increase in new release minutes played on Home
- Mentored 2 engineers bi-weekly and ran 8 quarterly effective mentorship workshops (to ~100 employees overall)

Spotify | Backend & Data Engineer 2

New York, NY (Sept 2021 - Feb 2024)

- Built data foundation for Audiobook product launch: generated all-time regional/global popularity, book affinity, & genre affinity datasets via Batch & Streaming pipelines in **Dataflow**; joined **12B streams & 18B interactions daily**
- Enabled data scientists to more accurately measure AB test results with Music Discovery datasets; these used **bloom filters** to capture phases of user track discovery (exposure, connection, lapsed exposure, re-connection, etc)
- Managed cloud infrastructure costs to save my team **\$1.4M in annual operating expenses**

Spotify | Backend Engineer 1

Boston, MA (Sept 2020 - Aug 2021)

- Led prototype and productionization of "Smart Shuffle" in playlists and Liked Songs that surfaces recs based on user intent. Received a [patent](#) for interleaving recommended media items in a playlist
- Influenced product to perform fast follow-up tests on different **candidate generation** and **sequencing** approaches for Smart Shuffle; added user feedback feature and expanded to **400M+ users globally**, increasing consumption by 17%
- Implemented a scalable backend system for the 2020 Wrapped Campaign's data stories, including new in-app quizzes and three personalized playlists, engaging 90M users with over 14B media impressions and 57M shares
- Co-lead for Incident Management workstream; facilitated ~50 incident reviews throughout my time at Spotify

Spotify | Summer Intern & Associate Backend Engineer

Boston, MA (June 2019 - Aug 2020)

- Optimized user onboarding by managing the creation of personalized artist mixes, evolving into "Niche Mixes"
- Productionized and launched "On Repeat" and "Repeat Rewind" playlists, managing the full lifecycle from A/B testing to high-quality code deployment
- Accelerated eng development by 40% by migrating radio & playlist code to a modern experimentation platform

LinkedIn | Software Engineer Intern

San Francisco, CA (May - Aug 2018)

Microsoft | Explorer Intern

Redmond, WA (May - Aug 2017)

SKILLS

- **Languages:** Java, Scala, Python, SQL, Javascript (Node.js), Bash
- **Data & Streaming:** GCP (Dataflow, PubSub, BigTable, BigQuery), Event-Driven Architecture, Batch & Real-time ETL Pipelines
- **Cloud & Infrastructure:** GCP, Kubernetes (GKE), Docker, CI/CD, Monitoring (Grafana, Victoria Metrics)
- **Technical Leadership:** Distributed Systems Design, ML Infrastructure, Incident Management, A/B Testing & Experimentation, Technical Mentorship

EDUCATION

Tufts University | B.S. Computer Science & Cognitive Brain Science Studies (Double Major)

Graduated May 2019

- Completed an interdisciplinary curriculum focused on the intersection of technology and human perception, supplemented with a Minor in Music