

# William S. Pierce

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## EDUCATION

CASE WESTERN RESERVE UNIVERSITY (GPA: 3.921) Aug 2020 - May 2024  
BSE Candidate in both Electrical and Computer Engineering, Dean's List all semesters

BOSTON UNIVERSITY MET COLLEGE Sep – Dec 2018  
Graduate Course MET CS 789 Cryptography

## WORK EXPERIENCE

### MOBILESPHERE

**Machine Learning & Full Stack Engineer** Boston, MA  
May 2023 – Present

- Developed distributed infrastructure & data pipelines for a “Voice Mail Merge” feature of Slybroadcast, a direct to voicemail marketing platform that serves well over a million active users
- Created a 50 million file 14TB self-labeled (plain text transcriptions, quantizations, phoneme extractions) Libri-Light audiobook dataset extension. Use voice and silence detection to cut and reformat the dataset
- Used Python, PyTorch, and DeepSpeed to train / validate an ML voice cloning model with short enrollment
- Developed an email support response bot using ChatGPT 4's API that automatically finds user accounts and solves support requests. Enrolled 2 services with the bot which now acts as the first response for all support
- Operate “on call” for security incidents. Identify and prevent large influxes of malicious requests and implement live fixes. Implement a custom fail-to-ban and token-bucket rate limits across multiple services

**Back End Engineer for VPN Services, Full Stack Engineer for Internal Tools** Jun – Aug 2022

- Made a custom OpenVPN build in C++ that supports connection logging & monitoring for internal tools

**Full Stack Engineer** Nov 2019 – May 2020

- Developed a custom REST framework, complete with database accessors, object models, an object schema validation protocol, and benchmarking tools. Implemented token and session based authentication
- Extended this custom REST to make the full API for Slyfone (API also used in Slynumber later) which interacted with an existing database schema, a Firebase notification & error tracking system, and a message aggregator post / webhook
- Optimized SQL & Google GO for slyText, a mass messaging service, improving response times over 2x
- Designed internal NPA-NXX telephone porting lookup tools across multi-million row PostgreSQL tables

### AZTHERAPIES

**Contract Data Analyst** Boston, MA  
Jul 2020 – Jan 2021

**Data Analyst Assistant** Sep 2019 – Jul 2020

- Developed an internal study data stratification tool. Worked alongside the company's clinical operations team to automate study data uptake & formatting processes. Modeled study data outcome probabilities
- Developed a health care app DOCV and accompanying business plan

### BOSTON UNIVERSITY

**Software Contractor** Boston, MA  
Dec 2016 – Jul 2020

- Developed a cloud-based customer management and order fulfillment system for BU's AGNI Magazine
- Shaped the platform to meet the magazine masthead's exact needs
- Conformed mishandled data into a new & well validated schema. Ensured long term structure & validation

## RELEVANT EXPERIENCE

### DEMON DATABASE MANAGEMENT ([demon.dms.com](https://demon.dms.com))

**Founder & Lead Engineer** Boston, MA  
Jun 2020 – Present

- Created a fully featured management platform to help small to medium sized non-profit publishers who can't otherwise afford CRM & subscription management systems
- Have grown to manage over 120,000 customer records and more than \$1.2 million of business-critical sales data across 7 internationally acclaimed literary magazines and presses in just 3 years
- Developed drag and drop filter-based advanced search interface, SQL schema parsing console, and all API infrastructure within sub-org Settable ([settable.com](https://settable.com)) offering search query generation as a service
- Designed record-search and record-matching algorithms to automate order entry & order attribution
- Perform yearly and per-update penetration testing and security analysis of the entire codebase
- Established isolated staging server with rigorous service testing procedures to prevent downtime
- Work with DigitalOcean, CentOS, PHP, Python, SQL, PDO, Redis, PrinceXML, CUPS, ZeroMQ, Google Cloud, Amazon S3, Ratchet WebSockets, OAuth, SendGrid, Stripe, Shopify
- Developed no-code block & action based automation interface that gives non-programmers powerful tools
- Implemented TOTP 2FA. Developed secure HMAC based API authentication methods for third party use
- Automated invoice management & payment onboarding. Developed internal tools for service monitoring