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   Boston, MA
  Machine Learning & Full Stack Engineer   May 2023 – Present
- Developed distributed infrastructure, data pipelines, and splicing algorithm for a "Voice Mail Merge" feature of Slybroadcast, a direct to voicemail marketing platform serving 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
- Created admin interfaces for 3 services that included analytics, user search, and customer support tools, giving the company the ability to respond effectively to support requests without asking developers.

  Back End Engineer for VPN Services, Full Stack Engineer for Internal Tools   Jun – Aug 2022
- Developed a custom OpenVPN build in C++ that supports advanced connection logging & metrics
- Created a client facing realtime VPN metrics & log aggregator alongside the company's lead engineer

  Full Stack Engineer   Nov 2019 – May 2020
- Developed a custom REST framework, complete with database interfaces, object models, an object schema validation protocol, and benchmarking tools. Implemented token and session based authentication
- Extended this REST to make the API for Slyfone (later also for sister app Slynumber) which interacted with an existing database schema, Firebase FCM + Crashlytics, and a US phone service provider's APIs.
- Optimized SQL & Google GO for slyText, a mass messaging service, improving response times over 2x
- Created VOIP porting region analysis tool that efficiently accesses multi-million row PostgreSQL tables

AZTHERAPIES   Boston, MA
  Contract Data Analyst   Jul 2020 – Jan 2021
  Data Analyst Assistant   Sep 2019 – Jul 2020
- Developed a study data stratification & visualization platform. Worked alongside the company's clinical operations team to automate daily data uptake & formatting processes. Modeled study outcome probabilities
- Developed a health care app DOCV with accompanying cloud server infrastructure and business plan

BOSTON UNIVERSITY   Boston, MA
  Software Contractor   Dec 2016 – Jul 2020
- Developed a LAMP based customer management and order fulfillment system for BU's AGNI Magazine
- Shaped the platform to meet the magazine masthead's changing needs over the course of development
- Worked with FileMaker Pro to export the magazine's complete dataset. Scripted the conformation of mishandled data into a new & well validated schema. Ensured long term structure & validation

RELEVANT EXPERIENCE

DEMON DATABASE MANAGEMENT (demondms.com)   Boston, MA
  Founder & Lead Engineer   Jun 2020 – Present
- Created a fully featured cloud-based 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) 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, WebSockets, OAuth, Javascript, HTML/CSS, jQuery, Twilio, SendGrid, Shopify, Stripe
- 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