

Joshua Brown

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Work Experience

TuneReel LLC • November 2020 - January 2021

Full Stack Developer & Application Security Engineer

- Managed team of three developers for a start-up company in the music licensing business
- Established an improved process of code and security review, documentation, and quality assurance measures
- Led new hire interview process for programmer including creation of test to accurately assess applicant skills

CMIT Solutions • July 2020 - August 2020

IT Security Intern

- Recommended to client, who suffered recent phishing incident, various cybersecurity solutions
- Reviewed and evaluated client needs and developed projection of costs to implement a corrective project
- Designed Excel matrix using pivot tables with advanced filter functionality to organize and compare products

NYAAFF • February 2020 - July 2022

Web Developer

- Designed and developed a website for an advocacy organization
- Created a custom static site generator to transform data and templates into HTML

Tamarack Tower • November 2019 - September 2022

Web Developer and Server Administrator

- Designed and developed web pages to enable the online purchase of event tickets and membership subscriptions
- Constructed and managed a Google Cloud Compute VM instance to host the website and to store donor data in a PostgreSQL database

MacAndrews & Forbes Incorporated • July 2018 - August 2018

Cybersecurity Technician Intern

- Created and managed AWS Ubuntu and Windows instances
- Configured network security rules and identified and mitigated irregularities using Sophos Central
- Reviewed network logs and generated user activity reports using Palo Alto Networks Console

Port Chester - Rye Brook Public Library • March 2018 - March 2022

Web Developer and Server Administrator

- Developed web pages to facilitate donations and designed a database to store donors' form data
- Integrated the PayPal payment API to accept debit/credit cards, bank accounts, and PayPal accounts
- Set up and managed a Google Cloud Compute VM instance to host the web pages and to generate donor data reports

Projects

ScreenView • April 2021 - Current

Application Development

- Co-developing a cross platform desktop application implementing the ScreenView protocol using Rust with native macOS APIs and Electron
- Contributed to multiple open source libraries and projects by opening issues and closing issues by successfully creating pull requests that were merged
- Rewrote two existing open source SRP (cryptographical PAKE) libraries in Rust and TypeScript namely one for the RustCrypto organization

Protocol Design

- Designed an open source suite of cryptographical and application level networking protocols culminating in a zero configuration end to end encrypted remote screen viewing and controlling software and authored a 23+ page LaTeX specification
- Applied cryptographical algorithms and protocols such as the SRP PAKE, HMAC, HKDF, TLS, ECDH, Digital Signatures, the BLAKE3 hash, the XChaCha20Poly1305 AEAD, replay avoidance, MITM avoidance
- Specified application level networking protocols over TCP and UDP with encryption, authentication, UDP amplification prevention, congestion control, and quality of service (QoS) techniques

BitLink • April 2020 - October 2020

- Developed an open source and free video conference web application during the COVID-19 pandemic to help people stay connected
- Employed machine learning to implement live background replacement and background blur to protect users' privacy

Education

University of Michigan • Expected Undergraduate Graduation 2025